Advanced Endoscopy Fellowship Curriculum

Center for Digestive Health

Virginia Mason Franciscan Health

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ADVANCED ENDOSCOPY FELLOWSHIP
AT VIRGINIA MASON FRANCISCAN HEALTH

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Introduction

Built on the foundation of Virginia Mason's internationally renowned Digestive Disease Institute, the Center for Digestive Health's active, state-of-the-art therapeutic endoscopy service at Virginia Mason Medical Center performs in excess of 1,500 endoscopic retrograde cholangiopancreatography (ERCP) and approximately 1,200 endoscopic ultrasound (EUS) procedures every year. The third-tier advanced endoscopy fellowship (AEF) program aligns with the Center's mission of advancing knowledge of digestive disease through teaching and research. The goal of this program is to train therapeutic endoscopists who possess a range of attributes, including a broad knowledge base related to therapeutic endoscopy, an ability to generate relevant differential diagnosis based on history and physical examination, an understanding of indications and contraindications of therapeutic procedures, skill at performing these procedures safely and effectively, and an appreciation of the humanistic and ethical aspect of medicine.

Number of Positions

Virginia Mason currently trains one fellow in advanced endoscopy yearly with time divided equally between ERCP and EUS procedures.

Eligibility

The third-tier advanced endoscopy fellow will have completed a three-year residency in internal medicine and an ACGME-approved fellowship in gastroenterology by the start date of the academic fellowship year. The fellow must be eligible for unrestricted Washington State medical licensure and for privileges to perform routine endoscopic procedures at Virginia Mason, including EGD and colonoscopies.

Candidates' gastroenterology training director must provide a written attestation that the candidate is competent and qualified to perform and be credentialed in basic endoscopy at an independent level. **We cannot consider applicants with J1 visa status.**

Duration of Training

The planned duration of training is one year.

Training Faculty

Training will be offered in ERCP, endoscopic ultrasound and other advanced endoscopy procedures. The fellow will train with the six physicians who perform ERCPs and receive advanced endoscopy training from other faculty members who are experts in areas of therapeutic endoscopy including stricture dilation, enteral stent placement, double-balloon enteroscopy, fistula closure, etc. Training in endoscopic ultrasound will include rotation with the five faculty members who perform endoscopic ultrasound. The Program Director will guide the training, provide feedback, evaluate performance and coordinate schedules for the fellow.

Training Institution

Hands-on training will be limited to Virginia Mason Franciscan Health. In rare circumstances, the fellow may observe procedures or patient care at other local institutions including the University of Washington Medical Center.

Salary

The advanced endoscopy fellow will receive a competitive salary and benefits at the regionally determined PGY-7 level.

Experience

The advanced endoscopy fellow will spend the majority of their time taking care of patients before, during, and after advanced endoscopy procedures such as ERCP and EUS, including lumen apposing metal stent placement. Training in endoscopic procedures will be provided in a step-wise fashion. Initially, fellows will observe the faculty performing these procedures, then transition to hands-on training. Hands-on experience will increase commensurate with the level of training of the fellow and the comfort level of individual faculty. The fellow may have one-half day of outpatient continuity clinic, one-half day of colon screening clinic (see Appendix: Colon Clinic Responsibilities) and one-half

day of research time per week for the duration of the fellowship. The fellow will also participate in weekly conferences and present to an external audience at least once during the training period.

Throughout the fellowship year, the fellow will perform at least 200 ERCPs, as recommended by the ASGE, take part in more than 400 ERCPs, perform at least 150 EUS procedures and take part in more than 300 EUS procedures. It is anticipated the fellow will also perform approximately 50 sphincterotomies independently, in addition to a variety of other therapeutic procedures, including biliary and pancreatic stent placement, expandable metal stent placement, and participation in POEM and ESD procedures.

Didactics and Conferences

In order to expose the fellow to a wide range of therapeutic endoscopy cases, the fellow is required to attend and actively participate in the following regular gastroenterology conferences at Virginia Mason: 1) GI Radiology Conference, 2) GI Pathology Conference, 3) GI Morbidity and Mortality Conference, 4) GI Tumor Board/Cancer Conference, 5) Bariatric Care Conference, and 6) GI Journal Club meeting. Additionally, the fellow is welcome to attend the regular Thoracic Tumor Board/Cancer Conference.

In order to enhance learning about the interpretation of fluoroscopy as used during therapeutic endoscopy procedures and the use of diagnostic and therapeutic radiologic tests in gastroenterology patients, the fellow will collect and review case summaries and medical record numbers from the attending therapeutic MDs on a monthly basis, then forward a list of all cases to the radiology team for presentation at GI Radiology Conference.

Call Schedule

Call responsibility will be approximately one weekend out of four.

Program Goal

The goal of the Advanced Endoscopy Fellowship curriculum is to teach requisite cognitive and technical aspects of interventional endoscopy, including: understanding relevant disease processes, their presentation and management (including but not limited to pancreaticobiliary disease, gastrointestinal malignancies, pre-cancerous lesions of the GI tract); analysis and interpretation of serologic and radiographic data; understanding the indications and contraindications for procedures; pre- and post-procedure care of the patient; recognition and management of complications; appropriate documentation and reporting; appropriate communication with the patient and the multidisciplinary team; and endoscopic research, presentation and publication.

Overview of Educational Objectives

The fellow will be mentored and directly supervised by gastroenterology faculty toward achievement of endoscopic, patient care, medical knowledge, research and teaching, and interpersonal and communication objectives. Progress toward these objectives will be monitored throughout the program.

Endoscopic Objectives

Perform all aspects of advanced diagnostic and therapeutic endoscopy techniques, including ERCP, EUS, endoluminal stenting, endoscopic mucosal resection and ablation, small bowel enteroscopy, complex fistula and stricture management, complex polypectomy, and endoscopy in post-surgical anatomy:

1. **Diagnostic endoscopic ultrasound:** cancer staging, fine needle aspiration and core biopsy
2. **Endoscopic retrograde cholangiopancreatography:** management of stones and strictures, ampullectomy, Sphincter of Oddi manometry, Spyglass cholangiopancreatoscopy
3. **Endoluminal stenting:** esophagus, gastroduodenal, colonic
4. **Management of complex GI fistulae:** use of endoscopic glue and clips
5. **Management of GI strictures:** use of stents, dilating balloons, and bougies
6. **Endoscopic mucosal resection and ablation:** high-grade dysplasia/T1 cancers (esophagus, stomach, small intestine, ampulla, colon), complex colon polyps, Barrett's esophagus
7. **Small bowel enteroscopy** (both antegrade and retrograde): single balloon enteroscopy, spiral overtube-assisted
8. **Endoscopy in post-surgical anatomy:** esophagectomy, gastrectomy, Whipple resections, gastric bypass and liver transplant, intestinal resections
9. **Therapeutic endoscopic ultrasound:** celiac plexus blockade & neurolysis, pancreatic pseudocyst drainage & necrosectomy, pancreaticobiliary drainage, fiducial marker placement, tumor ablation

At the end of the **first quarter**, the fellow will be able to:

1. Pass the side-viewing duodenoscope.
2. Appropriately position the duodenoscope for ERCP and selective ductal cannulation.
3. Identify and appreciate normal and abnormal fluoroscopic findings on ERCP.
4. Insert and exchange ERCP accessories over a wire.
5. Pass the radial and linear echoendoscope.
6. Identify anatomical landmarks at standard EUS stations, basic structures for EUS, and normal and abnormal endosonographic findings on EUS.
7. Independently maneuver the endoscope to lesions/areas of interest for EUS.
8. Achieve appropriate position and understand techniques used for endoscopic resection/ablation of mucosal based GI lesions.

At the end of the **second quarter**, the fellow will be able to:

Perform all of the first quarter specific learning goals and objectives with increasing skill plus:

1. Insert and remove pancreaticobiliary stents on ERCP.
2. Identify normal anatomic landmarks and abnormal findings on EUS.
3. Perform endoscopic and fluoroscopic evaluation of GI luminal strictures/obstructions.
4. Appropriately use dilating balloons and bougies in GI luminal strictures/obstructions.
5. Perform small bowel enteroscopy.
6. Appropriately use computer-assisted personalized sedation system.

At the end of the **third quarter**, the fellow will be able to:

Perform all of the above quarter specific learning goals and objectives with increasing skill plus:

1. Achieve selective cannulation of desired duct on ERCP.
2. Appropriately stage GI cancers using EUS.
3. Perform EUS-guided FNA on solid and cystic GI lesions.
4. Deploy endoluminal stents for GI strictures/obstructions.

At the end of the **fourth quarter**, the fellow will be able to:

Perform all of the above quarter specific learning goals and objectives with increasing skill plus:

1. Use cholangiopancreatoscopy in evaluation of intraductal panc/biliary disease.
2. Perform sphincter of Oddi manometry with appropriate interpretation of measurements.
3. Perform ampullectomy, EUS guided celiac plexus neurolysis and ERCP in patients with surgically altered GI anatomy.
4. Perform safe and effective endoscopic mucosal resection and ablation.
5. Use glue/clips/stents for endoscopic closure of GI tract leaks/fistulas/perforations.
6. Appreciate the indications and techniques of therapeutic EUS.

Patient Care Objectives

Center for Digestive Health patients include the entire spectrum of adult patients with medical, surgical, and psychiatric illnesses managed in an outpatient and inpatient setting. Patients originate from tertiary care referrals, the emergency room, and from community-based physicians. The fellow will encounter patients from each of these groups and in all stages of illness, ensuring experience with a comprehensive range of conditions managed by practicing gastroenterologists. In this context, the fellow will apply clinical, epidemiologic and gastrointestinal knowledge to the care of complex GI patients, demonstrate analytical thinking in approach to clinical situations, consistently teach and support team members, and provide compassionate, appropriate, and effective care of patients with gastrointestinal disease**:**

1. **Serving both the GI consult service and the endoscopy team, develop and implement treatment plans** by analyzing and interpreting relevant data and imaging, and by utilizing appropriate information systems and resources to help manage GI patients. Discuss new cases and clinical problems with an attending physician within an appropriate time interval. Formalize a management strategy.
2. **Provide sophisticated, concise, lucid and well-referenced written consultations** of acutely and chronically ill adult patients with gastrointestinal conditions, including history and physical exam and interpretation of lab, endoscopic, and radiologic data.
3. **Demonstrate effective oral communication** with the patient and his/her family, and oral and written communication with other health care providers.
4. **Advocate for quality patient care,** assist patients in dealing with health care complexity, and incorporate patient preferences when selecting diagnostic and therapeutic options.
5. **Use systematic approaches to reduce errors**, practice effective health care allocation that does not compromise quality of care and be knowledgeable about types of medical practices and health care delivery systems.
6. **Demonstrate humanistic treatment of patients** in the context of cultural, socioeconomic, ethical, environmental, and behavioral factors affecting their care.
7. **Participate in the evaluation and management of inpatients** who require any advanced endoscopic intervention, including post-procedure follow-up and management of complications.

Medical Knowledge Objectives

1. Recognize symptoms/signs, complete a differential diagnosis, and manage:

    a. **Bile duct disorders:** choledocholithiasis, cholelithiasis, cholangitis, bile duct strictures, bile duct leaks, cholecystitis, bile duct tumors and cancers, ampullary tumors and cancers, primary sclerosing cholangitis, jaundice, sphincter of Oddi dysfunction, postoperative complications, post-liver transplant complications

    b. **Pancreas disorders:** Acute pancreatitis, autoimmune pancreatitis, chronic pancreatitis, pancreas divisum, pancreatic cancer, pancreatic cysts, pancreatic neuroendocrine tumors, pancreatic pseudocysts, pancreatic duct strictures, post- operative complications, sphincter of Oddi dysfunction, ampullary tumors and cancers, pancreatic insufficiency

    c. **Gastrointestinal malignancies:** esophageal cancer, gastric cancer, duodenal cancer, ampullary cancer, small intestine cancer, colon cancer; metastatic disease; GI involvement of extraluminal GI cancers; precancerous lesions of the GI tract, including esophagus, stomach, small intestine, ampulla, and colon

    d. **Common and unusual conditions**: diseases of the esophagus, acid peptic diseases, acute, chronic/overt and obscure gastrointestinal bleeding, abdominal pain, the acute abdomen, motility disorders, irritable bowel syndrome, malabsorptive syndromes, inflammatory bowel disease, vascular disorders, gastrointestinal infections, autoimmune gastrointestinal diseases, gastrointestinal diseases in HIV positive and neutropenic hosts, gastrointestinal disease in the postoperative GI patient, gastrointestinal diseases in pregnancy, and benign and malignant strictures and fistulas of the GI tract.

2. Describe endoscopic, surgical, percutaneous, and pharmacologic options for treatment of the major diseases listed above, including:

    a. **Appropriate indications, contraindications, and complications** of diagnostic and therapeutic upper gastrointestinal endoscopy, colonoscopy, flexible sigmoidoscopy, proctoscopy and anoscopy, endoscopic mucosal resection techniques, chromoendoscopy, magnification endoscopy, capsule endoscopy, endoscopic retrograde cholangiopancreatography, endoscopic ultrasound and fine-needle aspiration/injection, endoscopic treatment of nonvariceal hemorrhage, percutaneous endoscopic gastrostomy/jejunostomy, dilatation via endoscopic methods and bougienage, biliary/pancreatic/enteral stent placement, argon plasma coagulation, and laser therapy.

    b. **Appropriate utilization and interpretation of laboratory tests**, tests of gastrointestinal absorption and secretion, and manometry, including sphincter of Oddi.

    c. **Appropriate use and interpretation of radiological studies**, including plain films of the abdomen, upper and lower gastrointestinal barium studies, abdominal computerized tomography, abdominal magnetic resonance imaging, abdominal ultrasound, percutaneous transhepatic cholangiography, abdominal angiography, and nuclear medicine studies of the gastrointestinal tract.

    d. **Indications, contraindications, natural history, and complications** of surgical procedures of the gastrointestinal tract.

Research & Teaching Objectives

The fellow will demonstrate ongoing commitment to self-directed learning, choose an independent research project relevant to therapeutic endoscopy by the end of the first month of fellowship training, complete an abstract by the first of December to be submitted to Digestive Disease Week, and author at least one publication by the end of his fellowship. The fellow will have one-half day a week dedicated to research. If deemed necessary, the Program Director, Section Head and/or the Center for Digestive Health Medical Director will allow extra time for research in order to help expedite the fellow's research project and publication.

1. **Review evidence-based literature** to answer clinical questions arising from patient care.
2. **Review and present current literature** including medical trial data.
3. **Organize clinical data** of complicated GI patients, compare personal practice patterns to larger populations, and analyze personal practice patterns systematically for possible means of improvement.
4. **Develop research skills**, including generating study designs, hypotheses and methods suitable for IRB and grant applications, basic and advanced data acquisition, statistical analysis, and manuscript preparation suitable for publication.
5. **Develop and submit** a minimum of two manuscripts, book chapters, or review articles.

In the **first quarter**, the fellow will:

1. Complete CITI GPC/Ethics Training course.
2. Attend the Wilske Research Symposium in September.
3. Develop study and submit IRB.

In the **second quarter**, the fellow will:

1. Complete data collection and present to Fellowship Director.
2. Analyze data and develop abstract.
3. Submit abstract to Digestive Disease Week by December.
4. Present research findings at DDI Director's Meeting in December.

In the **third quarter**, the fellow will:

1. Finalize analysis; write, edit, and distribute new manuscripts.
2. Finalize approval of manuscript and submit.
3. Present at University of Washington Frontiers in GI in March/April.

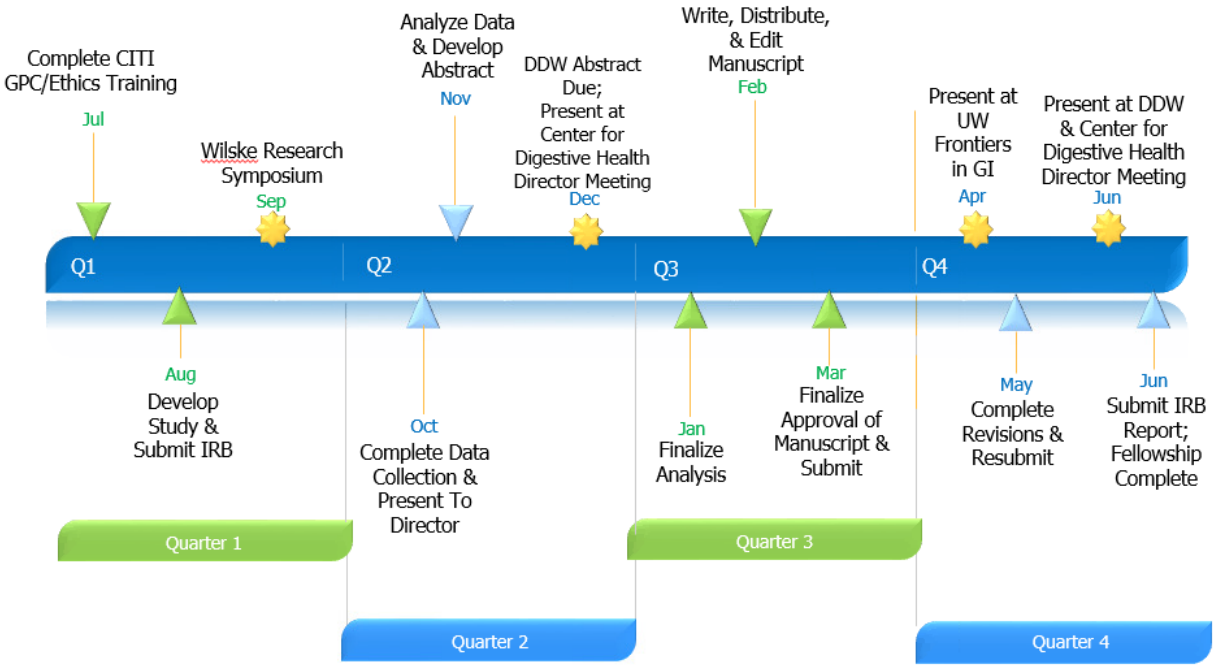
In the **fourth quarter**, the fellow will:

1. Complete all revisions and resubmit.
2. Present research findings at Digestive Disease Week and DDI Director's Meeting in May/June.
3. Submit report for all IRB studies.

All research data must be stored on a secured, shared drive. No PHI may be placed on a flash drive or moved from the secured, shared drive in any manner.

If the fellow is unable to complete a manuscript prior to completion of appointment as a Virginia Mason Franciscan Health Fellow, authorship may change. Access to Virginia Mason Franciscan Health's electronic medical record, including for the purpose of research, concludes when the fellowship appointment ends.

Advanced Endoscopy Fellowship Research Timeline



Center for Digestive Health

Interpersonal and Communication Objectives

1. Communicate effectively with patients and families in a compassionate, culturally and gender sensitive manner, including diagnosis, treatment plan, and follow-up care.
2. Appropriately notify supervising attending physicians of changes in the clinical status of patients and request consultations appropriately.
3. Effectively discuss end of life care with patients and their families.
4. Maintain communication with the endoscopy suite charge nurse, inpatient schedulers, endoscopy attending physicians, nurses, techs and all team members regarding patients and the procedure schedule.
5. Supervise and lead the team appropriately, demonstrating commitment to ethical principles pertaining to the provision or withholding of care, patient confidentiality, and informed consent.

Teaching Methods

The principal teaching method of the AEF program is case- and/or procedural-based discussions and instruction led by the attending physician. The majority of teaching will involve direct instruction in the performance of endoscopic procedures under supervision of attending physicians and may also include:

1. Modeling by attending physician
2. Direct 1:1 instruction by attending physician
3. Hands-on endoscopy training supervised by attending physician
4. Participation in regularly scheduled Clinical Conferences
5. Attendance at annual, scheduled, and small conferences and meetings
6. Use of scientific literature and information technology
7. Grand Rounds
8. Recommended reading

Teaching will be supplemented by multidisciplinary conferences, journal club, gastrointestinal tumor board meetings, and hepatopancreaticobiliary conferences. Teaching will also take place during daily management of patients on the service. The fellow will organize four endoscopy journal club sessions per year and take part in teaching activities of the Gastroenterology Division and Department of Surgery.

Evaluation and Feedback

The fellow will meet with the Program Director monthly and will receive verbal and written evaluations. The fellow will be expected to provide confidential assessment and feedback about the program and faculty. Evaluative content will be received from:

1. Direct observation during procedures, rounds, clinics, and conferences
2. Attending physician evaluation of fellow
3. Semi-annual evaluation by Program Director

Competency Assessment

Currently, there is no ACGME accreditation for third-tier advanced endoscopy fellowships. The fellow's competence is typically assessed by the program director and division chief. The fellow will keep a procedure log for advanced endoscopy procedures to include ERCPs, EUS procedures, sphincterotomies, stents, etc. This log will allow the Program Director to provide specific volumes of procedures the fellow performs when recommending privileges at different institutions.

Basic guidelines for evaluating competency are reviewed in Table 1, to be used in addition to the detailed endoscopy objectives outlined above.

Table 1: Guidelines for Endoscopic Training; Parameters of Competency
Table modified from American Gastroenterological Association; The Gastroenterology Core Curriculum

Reviews records, x-rays, identifies risk factors
Understands and discusses appropriate alternative procedures
Correctly identifies indication, knows how study will influence management
Obtains appropriate informed consent
Demonstrates proper use of pre-medication and non-invasive patient monitoring devices
Inserts the endoscope using proper technique
Performs procedures with attention to patient comfort and safety
Correctly identifies landmarks, for example, major and minor papilla
Conducts total examination of the entire organ, if appropriate
Detects and identifies all significant pathology
Completes examinations within a reasonable time
Prepares accurate reports
Plans correct management and disposition
Discusses findings with the patient, relatives, and other physicians
Conducts proper follow-up review of pathology and case outcomes

Appendix:

Colon Clinic Responsibilities

The AE program requires one half day of un-mentored colon screening to maintain the fellow's basic colonoscopy skills. The fellow will provide the highest possible service to his/her patients in colon clinic:

1. Train on NAPCIS. Prior to completion of training, use regular conscious sedation.
2. Greet each patient with respect; clarify preferred name.
3. Elicit the indication for colonoscopy and the history of previous colonoscopies.
4. Record history and physical on Provation MCG.
    a. Log on to Provation MCG.
    b. When prompted "is there a history and physical within 30 days" of procedure, answer "no."
    c. Record Mallampati score, lung and cardiovascular exams, ASA score. Save; finalize.
5. Complete full patient consent.
6. Perform highest quality colonoscopy: cecal intubation rate of >95%, adenoma detection rate of >30%, and withdrawal times >7min.
7. Call for an in-room consultation with a GI attending for all incomplete colonoscopies (unable to reach cecum) and difficult polypectomies.
8. Complete post procedure visit and give verbal results to ALL patients.
9. Communicate all pathology to patient via Results to Endorse (RTE) within five days of receipt in your inbox:
    a. Open SmaRTE.
    b. Open Results in Cerner; click on the result to be endorsed.
    c. RTE box will pop up when the result is right-clicked; click on letter.
    d. If patient has MyVirginiaMason portal access, there will be a pop up; instead of letter, click on "create" and then "consumer message."
    e. Letter or consumer message will contain the pathology results to be sent to patient. Your communication should be in plain language: tell the patient what type of polyps they had and when their next colonoscopy should be. Templates can be used and are suggested.
    f. If a letter is generated, a pop-up box will appear. Click on "print" (letter will not be sent to mailroom otherwise). If consumer message is generated, it will go directly to patient through their portal.
10. Update health maintenance in Cerner for ALL patients, regardless of presence/lack of polyps. Click on health maintenance, then on "CA colon cancer screening," then on the appropriate time interval for the patient's next colonoscopy.