CLINICAL GUIDELINES

Esophagogastroduodenoscopy (EGD)

Version 1.0.2023

Effective May 15, 2023

eviCore healthcare Clinical Decision Support Tool Diagnostic Strategies: This tool addresses common symptoms and symptom complexes. Imaging requests for individuals with atypical symptoms or clinical presentations that are not specifically addressed will require physician review. Consultation with the referring physician, specialist and/or individual's Primary Care Physician (PCP) may provide additional insight

.

eviCore's Clinical Review Criteria ("CRC") and related content is made available for the limited uses of: reference; and individual use, only limited to facilitating the determination of medically necessary and appropriate clinical treatment by clinicians for specific delegated patients under their care. The CRC and related content is proprietary information of eviCore, and copyrighted to the full extent of the law. Except as expressly permitted, you may not modify, copy, reproduce, republish, upload, post, transmit, hyperlink to or from, or distribute in any way the CRC, nor may you sell, transfer, distribute, assign, lease, reproduce, or otherwise use the CRC in commerce, in a manner that competes with us or infringes upon our rights, or for any public or commercial endeavor without our prior and express written consent.

CPT® (Current Procedural Terminology) is a registered trademark of the American Medical Association (AMA). CPT® five digit codes, nomenclature and other data are copyright 2022 American Medical Association. All Rights Reserved. No fee schedules, basic units, relative values or related listings are included in the CPT® book. AMA does not directly or indirectly practice medicine or dispense medical services. AMA assumes no liability for the data contained herein or not contained herein.

© 2022 eviCore healthcare. All rights reserved.

Esophagogastroduodenoscopy (EGD)

EGD-0: General Guidelines	**3**
EGD-1: Indications for EGD	**6**
EGD-2: Non-indications for EGD	**18**

©2022 eviCore healthcare. All Rights Reserved.

EGD-0: General Guidelines

- eviCore's Gastrointestinal (GI) Endoscopy Program applies an evidence-based approach to evaluate the most appropriate care for each individual. This evaluation requires submission of medical records pertinent to the treatment and/or services being requested by the provider.
- If the medical records provided do not provide sufficiently detailed information to understand the individual's current clinical status, then the medical necessity for the request cannot be established and the request cannot be approved.
- Specific elements of an individual's medical records commonly required to establish medical necessity include, but are not limited to:
  - Recent virtual or in-person clinical evaluation which includes a detailed history and physical examination
  - Laboratory studies
  - Imaging studies
  - Pathology reports
  - Procedure reports
  - Reports from other providers participating in treatment of the relevant condition
- Adequate clinical information must be submitted to eviCore in order to establish medical necessity for gastrointestinal endoscopy services. Pertinent clinical evaluation (within 60 days) including a recent detailed history, physical examination, and/or laboratory and prior imaging studies should be performed prior to considering endoscopy. Other meaningful contact (telehealth visit, telephone or video call, electronic mail or messaging) by an established individual can substitute for an in-person clinical evaluation.
- eviCore reserves the right to change and update the Gastrointestinal Endoscopy Policy. The Policy undergo a formal review at least annually. eviCore's policy is based upon major national and international association and society guidelines and criteria, peer reviewed literature, major treatises, as well as input from health plans, practicing academic and community-based physicians.
- This policy is not intended to supersede or replace sound medical judgment, but instead, should facilitate the identification of the most appropriate treatment given the individual's clinical condition. This policy is written to cover most gastrointestinal endoscopic indications. However, the policy may not be applicable in certain clinical circumstances. Physician judgment may override the policy. Clinical decisions, including treatment decisions, are the responsibility of the individual and his/her provider. Clinicians are expected to use independent medical judgment, which takes into account the clinical circumstances to determine individual management decisions.
- All time intervals in this guideline refer to upper endoscopy, unless otherwise stated.
- Requests for Open-Access Endoscopy must meet criteria according to these Guidelines.

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

- EGD-included Procedures
  - All requests for an additional EGD are evaluated based on whether the request meets guideline criteria for a therapeutic EGD.
  - Endoscopic Ultrasound
    - An endoscopic ultrasound (EUS) is a specialized procedure using a scope with ultrasound to create images of the digestive tract lining or other organs, such as the liver or pancreas.
    - The coding for an EUS includes a diagnostic EGD[46]. The unbundling of EUS into separate codes for EUS and diagnostic EGD is not supported.
    - eviCore does not adjudicate EUS at this time.
  - Endoscopic retrograde cholangiopancreatography
    - Endoscopic retrograde cholangiopancreatography (ERCP) is a procedure to diagnose and treat problems in the liver, gallbladder, bile ducts, and pancreas combining x-ray and the use of an endoscope.
    - Performing ERCP does not automatically require a separate EGD service. Automatically billing separate codes for ERCP and diagnostic EGD is not supported. Requests for EGD to be performed at the same time as ERCP will be adjudicated based on whether the request meets guideline criteria for a separate EGD.
    - eviCore does not adjudicate ERCP at this time.
- The terms “male” and “female” used in these guidelines refer to anatomic-specific diseases and disease predispositions associated with individuals’ sex assigned at birth rather than their gender identity. It should be noted that gender identity and anatomic specific diseases as well as disease predispositions are not always linked. As such, these guidelines should be applied to the individual’s corresponding known or suspected anatomic-specific disease or disease predisposition. At eviCore, we believe that it is important to understand how all individuals, including those who are gender diverse, choose to identify themselves. To ensure that gender-diverse individuals are treated with respect and that decisions impacting their healthcare are made correctly and with sensitivity, eviCore recognizes all individuals with the following gender marker options: Male, Female, Transgender male, Transgender female, “X”, and “Not specified”.
- State and federal legislations may need to be considered in the review of gastrointestinal endoscopy requests.
- eviCore supports the Choosing Wisely initiative (www.choosingwisely.org) by the American Board of Internal Medicine (ABIM) Foundation and many national physician organizations, to reduce the overuse of diagnostic tests that are low value, no value, or whose risks are greater than the benefits.
- CPT® (Current Procedural Terminology) is a registered trademark of the American Medical Association (AMA). CPT® five digit codes, nomenclature, and other data are copyright 2019 American Medical Association. All Rights Reserved. No fee schedules, basic units, relative values, or related listings are included in the CPT® book. AMA does not directly or indirectly practice medicine or dispense medical

©2022 eviCore healthcare. All Rights Reserved.

services. AMA assumes no liability for the data contained herein or not contained herein.

©2022 eviCore healthcare. All Rights Reserved.

EGD-1: Indications for EGD

EGD-1.1: Dyspepsia/Upper Abdominal Symptoms	7
EGD-1.2: GERD (Gastro-esophageal reflux disease)	8
EGD-1.3: Barrett's Esophagus	9
EGD-1.4: Gastric Ulcer	11
EGD-1.5: Duodenal Ulcer	11
EGD-1.6: Gastric Intestinal Metaplasia (GIM)	11
EGD-1.7: General Indications	12
EGD-1.8: Gastric Polyp Treatment and Follow-up	14
EGD-1.9: Atrophic Gastritis	14
EGD-1.10: Pernicious anemia	14
EGD-1.11: GIST (Gastrointestinal Stromal Tumors)	15
EGD-1.12: Gastric Neuroendocrine Neoplasms	15
EGD-1.13: Gastric Marginal Zone Lymphoma (MALT-type)	15
EGD-1.14: Bariatric Surgery	15
EGD-1.15: Known Malignancies	15
EGD-1.16: Genetic Syndromes	16

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

EGD-1.1: Dyspepsia/Upper Abdominal Symptoms

The following are indications for EGD in individuals with dyspepsia or upper abdominal symptoms. Dyspepsia is defined by the American College of Gastroenterology (ACG) and Canadian Association of Gastroenterology (CAG) as predominant epigastric pain lasting at least one month and can be associated with any upper gastrointestinal symptoms such as epigastric fullness, nausea, vomiting, or heartburn.

- New-onset symptoms in individuals ≥ 60 years of age.
- Individuals < 60 years of age without red flag symptoms
  - EGD if failure of an initial "test and treat" approach for H. pylori or a trial of empiric therapy for 4 weeks with a proton pump inhibitor (PPI)*
    - See Background and Supporting Information: Dyspepsia
- Any age with presence of ANY of the following red flag symptoms associated with dyspeptic or upper abdominal symptoms:
  - Family history of any of the following upper gastrointestinal (UGI) malignancies in a first-degree relative:
    - Esophageal
    - Gastric
    - Duodenal
  - Documentation of unintended weight loss > 5% within the past 6-12 months
  - GI bleeding presumed to be UGI in origin by one of the following:
    - History and/or physical examination (e.g., black stool, hematemesis; not hemorrhoidal bleeding)
    - Laboratory data (e.g., elevated BUN associated with GI blood loss, positive fecal occult blood)
  - Iron-deficiency anemia presumed to be UGI in origin, as manifested by low hematocrit or hemoglobin AND one of the following:
    - Low serum iron
    - Low serum ferritin
    - Elevated serum iron binding capacity
  - Documentation of dysphagia
  - Odynophagia characterized by chest pain on swallowing
  - Persistent or cyclic vomiting of unknown cause ≥ 7 days
  - Abnormal imaging study suggesting organic disease in one of the following:
    - Esophagus
    - Stomach
    - Duodenum
      - See also **EGD-2: Non-indications**
  - Clinical suspicion of malignancy as evidenced by:
    - Abdominal pain with associated weight loss
    - GI bleeding
    - Anorexia
    - Cachexia
  - A palpable intra-abdominal mass or lymphadenopathy noted on physical examination

©2022 eviCore healthcare. All Rights Reserved.

- Epigastric pain suggesting pancreatic or biliary source (e.g., pain radiating to the back, elevated liver enzymes, jaundice, etc.) should undergo cross-sectional imaging prior to EGD.
  - EGD can be approved in this context once imaging studies rule out a pancreatic or biliary source of pain

*Unless there is a documented history of allergy or intolerance to PPI use

EGD-1.2: GERD (Gastro-esophageal reflux disease)

This section refers to typical GERD quantified by symptoms of heartburn and/or regurgitation. Heartburn is defined by the ACG as "substernal burning sensation rising from the epigastrium up toward the neck". Regurgitation is the "effortless return of gastric contents upward toward the mouth, often accompanied by an acid or bitter taste".

Typical GERD

- EGD is indicated for typical GERD with the following:
  - Failure to respond to provider-directed, appropriate anti-secretory medical therapy with an 8 week trial of empiric PPIs once daily before a meal,
    OR
  - Return of symptoms after discontinuation of provider-directed, appropriate anti-secretory medical therapy with an 8 week trial of empiric PPIs once daily before a meal
- EGD is indicated if any of the following accompany GERD symptoms:
  - Documentation of dysphagia
  - Odynophagia characterized by chest pain on swallowing
  - Documentation of unintentional weight loss > 5% within the past 6-12 months
  - Hematemesis
  - GI bleeding or presumed to be UGI in origin by one of the following:
    - History and/or physical examination (e.g., black stool, hematemesis; not hemorrhoidal bleeding)
    - Laboratory data (e.g., elevated BUN associated with GI blood loss, positive fecal occult blood)
  - Iron-deficiency anemia presumed to be UGI in origin, as manifested by low hematocrit or hemoglobin AND one of the following:
    - Low serum iron
    - Low serum ferritin
    - Elevated serum iron binding capacity
  - Multiple risk factors for Barrett's esophagus (see: **EGD-1.3: Barrett's Esophagus**)
  - Finding of an UGI mass, stricture, or ulcer on imaging studies (CT, MRI, US)
    - See also: **EGD-2: Non-Indications for EGD, duodenal ulcer**
  - Persistent vomiting (≥ 7 days)

Chest Pain Attributed to Reflux (Non-cardiac Chest Pain)

- If accompanied by typical GERD symptoms, refer to typical GERD indications above
- If not accompanied by typical GERD symptoms, EGD is indicated when:

©2022 eviCore healthcare. All Rights Reserved.

- Cardiac disease has been ruled out by recent (within 60 days) ECG, chest x-ray or ECHO/US, and appropriate laboratory studies performed after symptoms started or worsened, OR
- Referral from cardiologist for GI workup

Extra-Esophageal Reflux

- Extra-esophageal symptoms of GERD include symptoms of chronic cough, throat-clearing, hoarseness, globus sensation, asthma, and/or laryngitis
- For extra-esophageal reflux accompanied by typical GERD symptoms (heartburn, regurgitation), EGD is appropriate when:
  - There is failure to respond to an 8-12 week trial of PPI therapy twice daily
- For extra-esophageal reflux not accompanied by typical GERD symptoms, EGD is appropriate when:
  - Evaluation for other causes have been considered for individuals with laryngeal symptoms, chronic cough, and asthma with appropriate ENT, pulmonary, or allergy evaluation as indicated AND
  - There is failure to respond to an 8-12 week trial of PPI therapy twice daily

Additional Indications

- Evaluation of individuals who are PPI-dependent* and being considered for endoscopic or surgical anti-reflux procedures (e.g., Nissen fundoplication)
- Evaluation of individuals with recurrent symptoms after endoscopic or surgical anti-reflux procedures
- Placement of wireless pH monitoring
- Repeat EGD in individuals found to have erosive esophagitis (Los Angeles Classification B, C, or D) after an 8-12 week course of PPI* therapy to exclude Barrett's esophagus or dysplasia

*Unless there is a documented history of allergy or intolerance to PPI use

EGD-1.3: Barrett's Esophagus

- Screening for Barrett's Esophagus
  - Individual with chronic GERD symptoms (defined as weekly symptoms for 5 or more years) AND at least 3 of the following risk factors:
    - Age ≥ 50 years
    - Caucasian race
    - Male sex
    - Obesity
    - History of tobacco smoking
    - Family history of a first-degree relative with Barrett's esophagus or esophageal adenocarcinoma

©2022 eviCore healthcare. All Rights Reserved.

- Surveillance for Barrett's Esophagus
  - If initial endoscopy suggests Barrett's Esophagus (defined as an extension of salmon-colored mucosa into the tubular esophagus ≥ 1cm) and biopsy is negative for intestinal metaplasia:
    - Endoscopy can be repeated in 1-2 years to rule out Barrett's Esophagus
  - If initial endoscopy is negative for Barrett's Esophagus, repeating endoscopy to evaluate for the presence of Barrett's Esophagus is NOT indicated.
  - Initial pathology findings suggestive of, or indefinite for, dysplasia of any grade should be confirmed by a second pathologist. Preferably, at least one of the pathologists should have specialized expertise in gastrointestinal pathology. Subsequent treatment and follow-up requests do not require review by two pathologists.
  - If no dysplasia on initial screening EGD (Non-dysplastic Barrett's esophagus or NDBE):
    - Repeat examinations intervals are based on the length of Barrett's epithelium
      - Barrett's esophagus < 3 cm: repeat in 5 years
      - Barrett's esophagus ≥ 3 cm: repeat in 3 years
  - If findings are indefinite for dysplasia on initial screening EGD:
    - Repeat EGD within 6 months
      - If repeat EGD yields a diagnosis of non-dysplastic Barrett's epithelium (NDBE), follow surveillance intervals for NDBE
      - If repeat EGD yields a diagnosis of low-grade dysplasia, follow surveillance intervals for low-grade dysplasia
      - If repeat EGD continues to demonstrate Barrett's esophagus indefinite for dysplasia, continue surveillance annually
  - If findings reveal low-grade dysplasia on initial screening EGD, and it is elected to pursue endoscopic surveillance instead of treatment:
    - Repeat EGD at 6 and 12 months from diagnosis, then annually
  - If findings suggest high-grade dysplasia or intramucosal esophageal adenocarcinoma, see treatment regimens below.
- Post-Ablative Therapy for Barrett's Esophagus (following complete eradication of Barrett's epithelium (CEIM), defined as 2 consecutive negative EGDs) – Follow up surveillance intervals after complete eradication of Barrett's epithelium are based on the most advanced pretreatment histology:
  - If treated for low-grade dysplasia:
    - EGD at 1 and 3 years following CEIM, then every 2 years thereafter
  - If treated for high-grade dysplasia:
    - EGD at 3, 6, and 12 months following CEIM, then annually thereafter
  - If treated for intramucosal carcinoma
    - EGD at 3, 6, and 12 months following CEIM, then annually thereafter
  - If recurrence of metaplasia or dysplasia is discovered:
    - Refer to the surveillance for Barrett's esophagus guidelines above

©2022 eviCore healthcare. All Rights Reserved.

EGD-1.4: Gastric Ulcer

- Surveillance EGD is indicated for ANY of the following:
  - In individuals whose gastric ulcer appears endoscopically suspicious for malignancy even if biopsies are benign, after 8-12 weeks of treatment (PPI* and/or H. pylori treatment)
  - In individuals who remain symptomatic despite an appropriate course of therapy (PPI* and/or H. pylori treatment) to rule out refractory peptic ulceration, non-peptic benign etiologies, and occult malignancy
  - In individuals with gastric ulcer without a clear etiology (e.g. no NSAID use, no H. pylori, etc.)
  - In individuals with gastric ulcer who did not undergo biopsy at the index endoscopy due to enhanced risk or inability to perform biopsy for medical reasons (e.g., active bleeding, coagulopathy, etc.)
  - In individuals diagnosed with gastric ulcer via radiologic imaging
  - In individuals with giant ulcers (> 3cm) to document healing
  - In individuals with refractory ulcers (fail to heal despite 8-12 weeks in therapy), surveillance EGD can be continued every 8-12 weeks until healing is documented.
    - See **Background and Supporting Information: Gastric Ulcer**

* Unless there is a documented history of allergy or intolerance to PPI use

EGD-1.5: Duodenal Ulcer

- Surveillance EGD can be considered for ANY of the following:
  - In individuals with duodenal ulceration who experience persistent symptoms despite an appropriate course of therapy, specifically to rule out refractory peptic ulcers and ulcers with non-peptic etiologies
    - Symptoms include: dyspepsia, epigastric pain (sometimes with radiation to the back or to the right or left upper quadrants, nausea and/or vomiting, early satiety, belching, fullness)
  - Giant duodenal ulceration (>2 cm) to document healing
  - Refractory ulcers: Surveillance EGD every 8-12 weeks until healing is documented
    - See **Background and Supporting Information: Duodenal Ulcer**

EGD-1.6: Gastric Intestinal Metaplasia (GIM)

- Dysplasia is detected
  - GIM with high-grade dysplasia
    - EGD can be repeated immediately, and then every 6 months
  - GIM with low-grade dysplasia
    - EGD every 12 months
- Absence of dysplasia
  - EGD at one year for risk stratification
    - For high-risk individuals (Hispanic, Asian, African, or North American Indigenous heritage/descent/ancestry; first-degree relative with gastric cancer) OR

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

        - Documented presence of high-risk stigmata (visually detected abnormalities such as nodularity) OR
        - Documented concern regarding the completeness of the baseline endoscopy (e.g., biopsies from only one region of the stomach)
    - EGD every 3-5 years from the baseline or after the above risk-stratification for:
        - Incomplete metaplasia (at least partial colonic metaplasia as opposed to complete small intestinal metaplasia)
        - High-risk individuals as indicated above
        - Extensive vs. limited metaplasia (involving the gastric body plus either antrum and/or incisura)
    - No further EGD for the surveillance of metaplasia:
        - If not identified by any one of the above-noted criteria (e.g., not a high-risk individual, complete small intestinal metaplasia, limited extent, no dysplasia)

EGD-1.7: General Indications

- Evaluation of documented dysphagia
- Evaluation of odynophagia characterized by chest pain on swallowing
- Persistent or cyclic vomiting of unknown cause ≥7 days
- GI bleeding presumed to be UGI in origin by one of the following:
    - History and/or physical examination (e.g., black stool, hematemesis; not hemorrhoidal bleeding)
    - Laboratory data (e.g., elevated BUN associated with GI blood loss, positive fecal occult blood)
- Iron-deficiency anemia presumed to be UGI in origin, as manifested by low hematocrit or hemoglobin AND one of the following:
    - Low serum iron
    - Low serum ferritin
    - Elevated serum iron binding capacity
- If colonoscopy is planned for the evaluation of iron-deficiency anemia, an EGD can be performed, if requested, at the same time.
- To assess acute injury after caustic ingestion
    - Examples include: strong acids (sulfuric, hydrochloric, nitric), alkalines (lye, sodium hydroxine, oven cleaner, drain cleaner, disc batteries, ammonia, bleach).
- Screening for esophageal cancer after distant caustic ingestion:
    - EGD every 2 years beginning 10 years after caustic ingestion insult
- Other diseases in which the presence of UGI pathology would modify other planned management, such as persons with a history of ulcer disease scheduled for organ transplantation, anticipation of long-term anticoagulation, or NSAID therapy.
- Persons with cirrhosis/portal hypertension to assess or treat esophageal varices
- To assess diarrhea in individuals suspected of having small bowel disease (e.g., celiac)

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

- EGD with small bowel biopsy indicated in individuals with chronic diarrhea or suspected malabsorption after inconclusive evaluation including colonoscopy with biopsy, or in individuals with positive celiac serology
  - EXCEPTION: HIV and Graft-vs.-Host Disease: in the absence of a diagnosis on flexible sigmoidoscopy, an EGD can be performed
- EGD with small bowel biopsy can be repeated in 2 years to assess for mucosal healing in celiac disease, or with recurrent symptoms despite 6 months of a gluten-free diet

- Removal of foreign bodies
- Removal or serial endoscopic treatments of known lesions, including ablation
  - Known polyp(s) which have not yet been removed
  - Bleeding lesions (such as known AVM, ulcers, or tumors requiring ablation, cautery, or other treatment)
  - For conditions in which specific guidelines exist, such as Barrett's esophagus, follow the appropriate guideline for that condition.
- Placement of a feeding or drainage tube
  - Examples include: Peroral, percutaneous endoscopic gastrostomy, percutaneous endoscopic jejunostomy
- Dilation, stenting, and other therapeutic interventions for treatment of benign or malignant stenotic lesions
  - Examples include: use of transendoscopic balloon dilators, dilation systems using guidewires, electrocoagulation, stents
- Management of achalasia
  - Examples include: endoscopic dilation, Botox® injection
- Diagnosis and management of eosinophilic esophagitis
  - See **EGD-1.1 Dyspepsia** and **EGD-1.2 GERD** for initial EGD indications
  - Follow-up EGD is indicated for:
    - Assessment of response to initial or changed therapy for individuals with an established diagnosis of eosinophilic esophagitis, evidenced by:
      - Prior endoscopic findings of a peak value of ≥15 eosinophils per high power field
- Intra-operative evaluation of anatomic reconstructions
  - Examples include: Evaluation of anastomotic leak and patency, fundoplication formation, pouch configuration during bariatric surgery
- For confirmation and specific histologic diagnosis of radiologically demonstrated lesions involving the UGI tract
  - Examples include: suspected neoplastic lesions of the esophagus, stomach, or duodenum, gastric or esophageal ulceration, upper tract stricture, or obstruction
    - See **EGD-2: Non-indications** for exceptions
- For sampling of tissue or fluid when clinically appropriate
  - Examples include: biopsy of small bowel for suspected celiac disease when appropriate, collection of gastric or duodenal fluid for analysis.
  - For specific indications (Like Barrett's esophagus, diarrhea, etc.) for which guidelines exist, follow the specific guideline for that condition.

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

- Evaluation and treatment of gastric outlet obstruction
  - Generally characterized by epigastric pain and vomiting after meals.
- Signs and symptoms may include nausea, vomiting, epigastric pain, weight loss, abdominal distention, and early satiety.Management of operative complications
  - Examples include: dilation of anastomotic strictures, stenting of anastomotic disruption, fistula, or leak

EGD-1.8: Gastric Polyp Treatment and Follow-up

- Adenomatous gastric polyps
  - Endoscopy 1 year after resection, followed by surveillance EGD every 3-5 years
- Hyperplastic gastric polyps resected, without dysplasia
  - Repeat EGD in 1 year
    - If polyp persists or dysplasia is present, and it is resected, repeat EGD in 1 year
  - Hyperplastic polyps without dysplasia generally do not require additional surveillance. However, in the course of endoscopy for hyperplastic gastric polyps, the standard of care should include mucosal sampling.
    - Additional follow-up for hyperplastic polyps without dysplasia
      - Mucosal sampling detects intestinal metaplasia
        - Follow-up per **EGD-1.6: Gastric Intestinal Metaplasia**
    - Mucosal sampling detects gastric atrophy
      - Follow-up per OLGA stage. See: **EGD-1.9: Atrophic Gastritis**
- Hyperplastic polyps with dysplasia
  - Annual EGD if requested

EGD-1.9: Atrophic Gastritis

- OLGA (Operative Link on Gastritis Assessment) stage 3 or 4
  - Endoscopic surveillance can be performed every 3 years
- OLGA stage 3 or 4 AND first-degree relative with gastric cancer
  - Endoscopic surveillance can be performed yearly
- Autoimmune atrophic gastritis
  - EGD every 3 years

EGD-1.10: Pernicious anemia

- EGD should be performed within 6 months of the diagnosis of pernicious anemia
  - Diagnosis of pernicious anemia as demonstrated by:
    - Vitamin B12 level below normal (<300 pg/mL) or elevated MMA (methylmalonic acid) AND one of the following:
      - Positive for anti-IF antibodies (intrinsic factor) OR
      - Positive for anti-parietal cell antibodies OR
      - Other laboratory findings consistent with Vitamin B12 deficiency including elevated MCV (mean corpuscular volume) and hypersegmented neutrophils seen on CBC OR
      - Other laboratory findings consistent with gastric atrophy (i.e., elevated fasting serum gastrin or decreased serum Pepsinogen I)

©2022 eviCore healthcare. All Rights Reserved.

- Follow-up examinations indicated only for the development of new symptoms
- If atrophic gastritis is found, refer to **EGD-1.9: Atrophic Gastritis**.

EGD-1.11: GIST (Gastrointestinal Stromal Tumors)

- Annual EUS/EGD surveillance of GISTs smaller than 2 cm if surgical resection is not performed, to determine progression of size or changes in echo features

EGD-1.12: Gastric Neuroendocrine Neoplasms

- After resection, can be re-evaluated every 6-12 months for the first 3 years, then annually

EGD-1.13: Gastric Marginal Zone Lymphoma (MALT-type)

- Follow-up after successful H. pylori treatment
  - Endoscopy up to every 3 months for the first 2 years and then up to every 6 months thereafter (optimal surveillance interval has not been defined)

EGD-1.14: Bariatric Surgery

- Pre-operative endoscopic evaluation of the bariatric surgery individual
- Post-operative endoscopic evaluation for the following symptoms:
  - Nausea or vomiting
  - Abdominal pain
  - Post-op GERD
  - Dumping Syndrome
  - Diarrhea and nutritional deficiencies
  - Endoscopic intervention for treatment of stenosis, removal of foreign body material, bezoars, management of fistulae and leaks
  - Bleeding or anemia
  - Failure to lose weight or to regain weight after an initial post-operative weight loss

EGD-1.15: Known Malignancies

- Known Esophageal Malignancy
  - Endoscopy as felt clinically indicated by the ordering provider for the management of complications, treatment, evaluation of ongoing or new symptoms, and surveillance for recurrence
- Known Gastric Malignancy
  - EGD as felt clinically indicated by the ordering provider for the endoscopic management of complications, ongoing or new symptoms, treatment, and surveillance for recurrence
- Known Duodenal or Small Bowel Malignancy
  - EGD as felt clinically indicated by the ordering provider for the management of complications, treatment, ongoing or new symptoms, and surveillance for recurrence

©2022 eviCore healthcare. All Rights Reserved.

EGD-1.16: Genetic Syndromes

- Lynch Syndrome
  - For all mutations (MLH1/MSH2, MSH6/PMS2)
    - EGD beginning at age 30 years, every 2-3 years
- Juvenile Polyposis Syndrome (defined as individuals with 5 or more juvenile polyps in the colorectum or any juvenile polyps in other parts of the GI tract, or evidence of SMAD4 or BMPRI1A mutations)
  - EGD at age 12 years. If polyps are present, repeat yearly. If no polyps, repeat every 2 years.
- Peutz-Jeghers Syndrome (defined as individuals with perioral or buccal pigmentation and/or 2 or more histologically characteristic hamartomatous polyps, or family history of PJS, or STK11 mutations)
  - EGD at age 8 years. If polyps present, can be repeated every 3 years. If no polyps, repeat at age 18 years, then every 3 years, or earlier if any symptoms occur.
- Hereditary Gastric Cancer (Hereditary Diffuse Gastric Cancer-HDGC Syndrome)
  - EGD beginning 10 years before the earliest cancer in the family, up to every 6 months.
- BMMRD (Biallelic Mismatch Repair Deficiency)
  - EGD annually, beginning at age 8 years
- Tylosis (Rare autosomal dominant disorder characterized by hyperkeratosis of the palms and feet, with lifetime risk of esophageal cancer of 40% in Americans)
  - Annual EGD beginning at age 30 years or at the onset of recognition of the disease
- Cowden Syndrome (PTEN Hamartoma Tumor Syndrome)
  - EGD beginning at age 15 years
  - Repeat surveillance every 2 years
  - If polyps present, follow-up EGD at the discretion of the endoscopist, depending on the number of polyps, as felt indicated.
- Classical Familial Polyposis (FAP)/Attenuated FAP
  - EGD beginning at age 20 years
    - EGD before 20 years of age when either of the following are met:
      - Individual has undergone a colectomy prior to the age of 20 years OR
      - Request is prior to a planned colectomy
  - See **Spigelman Stage** for follow-up imaging intervals
- MAP (MUTYH-Associated Polyposis)
  - EGD beginning at age 30 years
  - See **Spigelman Stage** for follow-up imaging intervals

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

- Spigelman Stage
  - Follow-up imaging depending on Spigelman Stage of duodenal polyposis as follows (using point system):

Polyps	1 Point	2 Points	3 Points
Number	≤4	5-20	>20
Size	0-≤4	5-10	>10
Histology	Tubular	Tubulovillous	Villous
Dysplasia	Mild	Moderate	Severe

Spigelman Stage	Total Points	Surveillance Interval
0	0	Every 4 years
I	≤4	Every 2-3 years
II	5-6	Every 1-3 years
III	7-8	Every 6-12 months
IV	9-12	Every 3-6 months (if surgery not chosen)

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924

EGD-2: Non-indications for EGD

- Symptoms that are considered functional in origin:
  - EGD may be done ONCE to rule out organic disease especially if symptoms are unresponsive to therapy, or recur that are different from the original symptoms
    - Follow guidelines for **EGD-1.1 Dyspepsia** or **EGD-1.2 GERD**, depending on the predominant symptom
- Metastatic adenocarcinoma of unknown primary site when the results will not alter management
- To evaluate radiologic findings for:
  - Asymptomatic or uncomplicated sliding hiatal hernia
  - Uncomplicated duodenal ulcer that has responded to therapy
  - Deformed duodenal bulb when symptoms are absent or respond to therapy
- Sequential or periodic EGD for surveillance of malignancy in individuals with:
  - Fundic gland polyps
  - Previous gastric operations for benign disease
  - Surveillance of healed benign disease such as esophagitis and gastric or duodenal ulcer
- Endomicroscopy
  - At the current time, endomicroscopy is considered investigational and experimental

Background and Supporting Information

- Dyspepsia/Upper abdominal symptoms
  - Studies comparing "test and treat" approach with endoscopy have reported no difference in symptom control, with most studies also showing increased cost with an "initial endoscopy" approach (ASGE). A potential advantage of negative endoscopy in the evaluation of dyspeptic individuals is a reduction in anxiety and an increase in individual satisfaction, yet there is little evidence to suggest significant improvement with outcomes by this approach (ASGE)
  - There is a significant difference in guidelines proffered by the ACG and ASGE. ACG guidelines (2017) establish the age for endoscopy with new symptoms at ≥ 60 years, rather than 50 years for the ASGE, and in fact, do not recommend endoscopy even in the presence of red flag symptoms for most individuals < 60 years of age because of a low positive predictive value for detecting UGI malignancy in this age group
- Barrett's Esophagus
  - If initial endoscopy is negative for Barrett's Esophagus, repeating endoscopy to evaluate for the presence of Barrett's Esophagus is NOT indicated
  - If initial examination shows BE but no dysplasia, follow-up endoscopy in one year is NOT indicated. Follow prescribed guidelines
- GERD
  - If the individual's history is consistent with typical or uncomplicated GERD, an initial trial of empiric medical therapy is appropriate before consideration of endoscopy in most individuals

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

- Endoscopy is not indicated for the evaluation of individuals with suspected extra-esophageal manifestations of GERD who present with symptoms such as choking, coughing, asthma, hoarseness, laryngitis, chronic sore throat, or dental erosions
- (ASGE) Given that the majority of these individuals will not have endoscopic evidence of erosive esophagitis, especially when taking empiric medical therapy for GERD, the routine use of EGD to evaluate extra-esophageal symptoms of GERD is NOT recommended
  - See: **EGD-1.2** for specific instances in which evaluation of extra-esophageal symptoms with EGD is indicated
- There is a paucity of outcomes research to suggest that early or even once-in-a-lifetime EGD has a favorable effect on the management, course, or health-related quality of life of individuals with typical symptoms of GERD without red flag symptoms (ASGE)

- Gastric Ulcer
  - The rationale for surveillance has been that some individuals with endoscopically benign-appearing gastric ulcerations may eventually be shown to have gastric cancer. However, the efficacy of surveillance is unclear. An analysis of the Clinical Outcomes Research Initiative database found that approximately 25% of individuals diagnosed with gastric ulceration undergo repeat endoscopy despite the fact that multiple studies have found limited yield in identifying malignancy with surveillance endoscopy (ASGE)
- Duodenal Ulcer
  - More than 90% of duodenal ulcers heal with 4 weeks of PPI therapy.

©2022 eviCore healthcare. All Rights Reserved.

References

1. Moayyedi PM, Lacy BE, Andrews CN, Enns RA, Howden CW, Vakil N. ACG and CAG clinical guideline: Management of dyspepsia. *Am J Gastroenterol.* 2017;112(7):988-1013. doi:10.1038/ajg.2017.154
2. Shaheen NJ, Falk GW, Iyer PG, Gerson LB. ACG clinical guideline: Diagnosis and management of Barrett's esophagus. *Am J Gastroenterol*. 2015;111(1):30-50. doi:10.1038/ajg.2015.322
3. Evans JA, Chandrasekhara V, Chathadi KV, et al. The role of endoscopy in the management of premalignant and malignant conditions of the stomach. *Gastrointestinal Endoscopy*. 2015;82(1):1-8. doi:10.1016/j.gie.2015.03.1967
4. Dinis-Ribeiro M, Areia M, de Vries AC, et al. Management of precancerous conditions and lesions in the stomach (MAPS): Guideline from the European Society of Gastrointestinal Endoscopy (ESGE), European Helicobactor Study Group (EHSG), European Society of Pathology (ESP), and the Sociedade Portugesa de Endoscopia Digestiva (SPED). *Endoscopy.* 2012 Jan;44(1):74-94. doi: 10.1055/s-0031-1291491.
5. Banerjee S, Cash BD, Dominitz JA, et al. The role of endoscopy in the management of patients with peptic ulcer disease.Gastrointest Endosc 2010; 71(4): 663-668. doi:10.1016/j.gie.2009.11.026
6. Shaukat A, Wang A, Acosta RD, et al.The role of endoscopy in dyspepsia. *Gastrointest Endosc.* 2015; 82(2):227-232 doi:10.1016/j/gie/2015.04.003
7. Wani S, Qumseya B, Sultan S, et al. Endoscopic eradication therapy for patients with Barrett's esophagus–associated dysplasia and intramucosal cancer. *Gastrointestinal Endoscopy*. 2018;87(4). doi:10.1016/j.gie.2017.10.011
8. Delaney B, Moayyedi P, Deeks J, et al. The management of dyspepsia: a systematic review. *Health Technology Assessment*. 2000;4(39). doi:10.3310/hta4390
9. Muthusamy VR, Lightdale JR, Acosta RD, et al. The role of endoscopy in the management of GERD. *Gastrointestinal Endoscopy*. 2015;81(6):1305-1310. doi:10.1016/j.gie.2015.02.021
10. Evans JA, Muthusamy VR, Acosta RD, et al. The role of endoscopy in the bariatric surgery patient. *Gastrointestinal Endoscopy*. 2015;81(5):1063-1072. doi:10.1016/j.gie.2014.09.044
11. Pasha SF, Acosta RD, Chandrasekhara V, et al. The role of endoscopy in the evaluation and management of dysphagia. *Gastrointestinal Endoscopy*. 2014;79(2):191-201. doi:10.1016/j.gie.2013.07.042
12. Evans JA, Early DS, Chandraskhara V, et al. The role of endoscopy in the assessment and treatment of esophageal cancer. Gastrointestinal Endoscopy. 2013;77(3) doi:10.1016/j.gie.2012.10.001
13. Shen B, Khan K, Ikenberry SO, et al. The role of endoscopy in the management of patients with diarrhea. *Gastrointestinal Endoscopy*. 2010;71(6):887-892. doi: https://doi.org/10.1016/j.gie.2009.11.025
14. American Gastroenterological Association Medical Position Statement on the Management of Barretts Esophagus. *Gastroenterology*. 2011;140(3):1084-1091. doi:10.1053/j.gastro.2011.01.030
15. Kahrilas PJ, Shaheen NJ, Vaezi MF. American Gastroenterological Association Medical Position Statement on the Management of Gastroesophageal Reflux Disease. *Gastroenterology*. 2008;135(4). doi:10.1053/j.gastro.2008.08.045
16. Wani S, Rubenstein JH, Vieth M, Bergman J. Diagnosis and management of low-grade dysplasia in Barrett's esophagus: Expert review from the clinical practice updates committee of the American Gastroenterological Association. Gastroenterology. 2016;151(5):822-835. doi:10.1053/j.gastro.2016.09.040
17. Rubio-Tapia A, Hill ID, Kelly CP, Calderwood AH, Murray JA. ACG Clinical Guidelines: Diagnosis and Management of Celiac Disease. T*he American Journal of Gastroenterology*. 2013;108(5):656-676. doi:10.1038/ajg.2013.79
18. Dellon ES, Gonsalves N, Hirano I, Furuta GT, Liacouras CA, Katzka DA. ACG Clinical Guideline: evidenced based approach to the diagnosis and management of esophageal eosinophilia and eosinophilic esophagitis (EoE). *The American Journal of Gastroenterology*. 2013;108(5):679-692. doi:10.1038/ajg.2013.71
19. Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. *The American Journal of Gastroenterology*. 2013;108(3):308-328. doi:10.1038/ajg.2012.444
20. Wani S, Rubenstein JH, Vieth M, Bergman J. Diagnosis and management of low-grade dysplasia in Barrett's esophagus: Expert review from the clinical practice updates committee of the American Gastroenterological Association. *Gastroenterology*. 2016;151(5):822-835. doi:10.1053/j.gastro.2016.09.040
21. Gisbert JP, Calvet X. Helicobacter Pylori "Test-and-Treat" Strategy for Management of Dyspepsia: A Comprehensive Review. *Clinical and Translational Gastroenterology*. 2013;4(3). doi:10.1038/ctg.2013.3
22. ASGE Standards of Practice Committee, Evans JA, Early DS, Fukami N, Ben-Menachem T et al. The role of endoscopy in Barrett's Esophagus and other premalignant conditions of the esophagus. *Gastrointest Endosc*. 2012:76:1087-1094.
23. Early DS, Ben-Menachem T, Decker GA, et al. Appropriate use of GI endoscopy. *Gastrointestinal Endoscopy*. 2012;75(6):1127-1131. doi:10.1016/j.gie.2012.01.011.
24. Syngal S, Brand RE, Church JM, Giardiello FM, Hampel HL, Burt RW. ACG Clinical Guideline: Genetic Testing and Management of Hereditary Gastrointestinal Cancer Syndromes. *The American Journal of Gastroenterology*. 2015;110(2):223-262. doi:10.1038/ajg.2014.435.

©2022 eviCore healthcare. All Rights Reserved.

25. Giardiello FM, Allen JI, Axilbund JE, et al. Guidelines on Genetic Evaluation and Management of Lynch Syndrome: A Consensus Statement by the US Multi-Society Task Force on Colorectal Cancer. *The American Journal of Gastroenterology*. 2014;109(8):1159-1179. doi:10.1038/ajg.2014.186.
26. Rubenstein JH, Enns R, Heidelbaugh J, et al. American Gastroenterological Association Institute Guideline on the Diagnosis and Management of Lynch Syndrome. *Gastroenterology*. 2015;149(3):777-782. doi:10.1053/j.gastro.2015.07.036.
27. Durno C, Boland CR, Cohen S, et al. Recommendations on surveillance and management of Biallelic Mismatch Repair Deficiency (BMMRD) syndrome: A consensus statement by the US multi-society task force on colorectal cancer. *Gastroenterology*. 2017;152(6):1605-1614. doi:10.1053/j.gastro.2017.02.011.
28. Evans JA, Early DS, Fukami N, et al. The role of endoscopy in Barretts esophagus and other premalignant conditions of the esophagus. *Gastrointestinal Endoscopy*. 2012;76(6):1087-1094. doi:10.1016/j.gie.2012.08.004.
29. Rex DK, Boland R, Dominitz JA, Giardiello FM, Johnson DA, et al. Colorectal cancer screening: recommendations for physicians and patients from the U.S. multi-society task force on colorectal cancer. *Am J Gastroenterology*. 2017. doi: 10.1038/ajg.2017.174
30. Islam RS, Patel NC, Lam-Limlin D, Nguyen CC. Gastric polyps: A review of clinical, endoscopic, and histolopathologic features and management decisions. *Gastroenterol Hepatol (NY)*. 2013;9(10):640-651.
31. Chauhan SS, Abu Dayyeh BK, Bhat YM, et al. Confocal laser endomicroscopy. *Gastrointestinal Endoscopy*. 2014;80(6):928-938. doi:10.1016/j.gie.2014.06.021.
32. ASGE Standards of Practice Committee, Pasha SF, Shergill A, Acosta RD, et al. The role of endoscopy in the patient with lower GI bleeding. *Gastrointest Endosc*. 2014;79(6):875-885. doi:10.1016/j.gie.2013.10.039.
33. ASGE Standards of Practice Committee, Qumseya B, Sultan S, Bain P, et. al. Guideline on screening and surveillance of Barrett's esophagus. *Gastrointest Endosc*. 2019:90(3):335-359. doi:10.1016/j.gie.2019.05.012.
34. Fitzgerald RC, di Pietro M, Ragunath K, et. al. British Society of Gastroenterology guidelines on the diagnosis and management of Barrett's oesophagus. *Gut*. 2013;63(1)7-42. doi: 10.1136/gutjnl-2013-305372.
35. Shaheen N, Weinberg D, Denberg T, Chou R, Amir Q, Shekelle P. Upper endoscopy for gastroesophageal reflux disease: best practice advice from the Clinical Guidelines Committee of the American College of Physicians. *Annals of internal medicine*. 2012;157:808-816. doi:10.7326/0003-4819-157-11-201212040-00008.
36. Fock KM, Talley N, Goh KL, et. al. Asia-Pacific consensus on the management of gastro-esophageal reflux disease: an update focusing in refractory reflux disease and Barrett's esophagus. *Gut.* 2016;65(9):1402-1415. doi:10.1136/gutjnl-2016-311715.
37. Harnik I. Gastroesophageal Reflux Disease. *Ann Intern Med*. 2015;163(1):ITC1. doi:10.7326/AITC201507070.
38. Steele D, Kondal KKB, Peter S. Evolving screening and surveillance techniques for Barrett's esophagus. *World J. Gastroenterol*. 2019:25(17):2045-2057. doi:10.3748/wjg.v25.i17.2045.
39. Gupta S, Li D, El Serag HB, et. al. AGA clinical practice guidelines on management of gastric intestinal metaplasia. *Gastroenterology*. 2019;158(3):693-702. doi:10.1053/j.gastro.2019.12.003.
40. Pimentel-Nunes P, Libânio D, Marcos-Pinto R, et al. Management of epithelial precancerous conditions and lesions in the stomach (MAPS II): European Society of Gastrointestinal Endoscopy (ESGE), European Helicobacterand Microbiota Study Group (EHMSG), European Society of Pathology (ESP), and Sociedade Portugeusa de Endoscopia Digestiva (SPED) guideline update 2019. *Endoscopy*. 2019;51:365-388. doi:10.1055/a-0859-1883.
41. Ammouri W, Harmouche H, Khibri H, et. al. Pernicious anaemia: mechanisms, diagnosis, and management. *EMJ Hematol US*. 2020;1(1):71-80.
42. Banks M, Graham D, Jansen M, et. al. British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma. *Gut*. 2019;68:1545-1575. doi:10.1136/gutjnl-2018-318126.
43. Yang J, Gurudu SR, Koptiuch C, et. al. American Society for Gastrointestinal Endoscopy Guideline on the role of endoscopy in familial adenomatous polyposis syndromes. *Gastrointest Endosc*. 2020;91(5):963-982. doi:10.1016/j.gie.2020.01.028.
44. Hirano I, Chan ES, Rank MA, et. al. AGA institute and the joint task force on allergy-immunology practice parameters clinical guidelines for the management of eosinophilic esophagitis. *Ann Allergy Asthma Immunol*. 2020;124(5):416-423. doi:10.1016/j.anai.2020.03.020.
45. Park WG, Shaheen NJ, Cohen J, et. al. Quality indicators for EGD. *Am J Gastroenterol.* 2015;110(1):60-71. doi:10.1038/ajg.2014.384.
46. Littenberg GD, Mueller KA. *ASGE coding primer: A guide for the gastroenterology practice*. Downers Grove, IL: American Society for Gastrointestinal Endoscopy. 2018.
47. Katz PO, Dunbar KB, Schnoll-Sussman FH, Greer KB, Yadlapati R, Spechler SJ. ACG clinical guideline for the diagnosis and management of gastroesophageal reflux disease. *Am J Gastroenterol*. 2022;1171(1):27-56. doi:10.14309/ajg.0000000000001538.
48. Kahrilas, PJ, Altman KW, Chang AB, et.al. Chronic Cough due to gastroesophageal reflux in adults: CHEST guideline and expert panel report. *Chest*. 2016;150(6):1341-60. doi:10.1016/j.chest.2016.08.1458.
49. Sierżantowicz R, Ładny JR, Kurek K, Lweko J. Role of preoperative esophagogastroduodenoscopy (EGD) in bariatric treatment. *J Clin Med*. 2021;10(13):2982. doi:10.3390/jcm10132982.
50. Schlottmann F, Reino R, Spano M, Galvarini M, Alvarez Gallesio J, Buxhoeveden R. Preoperative endoscopy in bariatric patients may change surgical strategy. *Society of American Gastroinestinal and Endoscopic Surgeons.*

©2022 eviCore healthcare. All Rights Reserved.

https://www.sages.org/meetings/annual-meeting/abstracts-archive/preoperative-endoscopy-in-bariatric-patients-may-change-surgical-strategy/
51. Early DS, Ben-Menachem T, Decker GA, et. al. Appropriate use of GI endoscopy. *Gastrointest Endosc*. 2012;75(6):1127-1131. doi:10.1016/j.gie.2012.01.011.
52. Shaheen, NJ, Falk GW, Iyer PG, et.al. Diagnosis and management of Barrett's esophagus: An updated ACG guideline. *Am. J. Gastroenterol*. 2022;117:559-587.
53. National Institute for Health and Care Excellence (NICE). Gastroesophageal reflux disease and dyspepsia in adults: investigation and management (CG184). 2019. www.nice.org.uk/guidance/CG184.
54. Nasseri-Moghaddam S, Mousavain A, Kasaeian A, et. al. What is the prevalence of clinically significant endoscopic findings in subjects with dyspepsia? Updated systemic review and meta-analysis. *Clin Gastroenterol Hepatol*. 2022;S1542-3565(22)00594-8. doi:10.1016/j.cgh.2022.05.041.
55. Stanghellini V. Functional dyspepsia and irritable bowel syndrome: Beyond Rome IV. *Dig Dis*. 2017;35:14-17. doi:10.1159/000485408.

©2022 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com