# MEDICAL POLICY

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| **SUBJECT: NON-INVASIVE HELICOBACTER PYLORI (H PYLORI) TESTING: UREA BREATH TEST AND STOOL ANTIGEN TEST** | **EFFECTIVE DATE: 05/19/11**<br>**REVISED DATE: 05/24/12, 05/23/13**<br>**ARCHIVED DATE: 05/22/14**<br>**EDITED DATE: 05/28/15, 05/25/16, 05/18/17, 05/17/18** |
| **POLICY NUMBER: 2.02.02** | |
| **CATEGORY: Technology Assessment** | **PAGE: 1 OF: 6** |

- ***If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.***
- ***If a commercial product, including an Essential Plan product, covers a specific service, medical policy criteria apply to the benefit.***
- ***If a Medicare product covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.***

## POLICY STATEMENT:

Based upon our criteria and assessment of the peer-reviewed literature:

I. Testing for H pylori infection using either an urea breath test (UBT $^{13}C$ or $^{14}C$) *or* a stool antigen test (HpSA®) has been medically proven to be effective and is **medically appropriate** for the following:
   A. Patients, aged 55 years or younger, with uninvestigated dyspeptic symptoms who have no "alarm features" suggestive of cancer or ulcer complications (e.g., bleeding, anemia, unexplained weight loss, vomiting, dysphagia);
   B. Determining eradication after antibiotic therapy in any of the following circumstances:
      1. Patients with active peptic ulcer disease (PUD) or who have received treatment for H. pylori PUD;
      2. Patients with persistent dyspeptic symptoms after an appropriate course of treatment;
      3. Patients with associated mucosa-associated lymphoid tissue (MALT) lymphoma; or
      4. Patients who have undergone resection for early gastric cancer.
   C. As part of the preoperative work-up for patients undergoing a bariatric procedure.

II. Screening for H. pylori infection in the absence of upper gastrointestinal symptoms is considered **not medically necessary** (except as stated above).

III. Simultaneous or concurrent testing using UBT and HpSA® is considered **not medically necessary**.

*Refer to Administrative policy #AP-11, Helicobacter Pylori (H. pylori) Serology Testing.*

## POLICY GUIDELINES:

I. The American College of Gastroenterology guidelines recommend that diagnostic testing for H. pylori infection should only be performed if treatment is intended for positive results.

II. Dyspepsia associated with "alarm features" (e.g., bleeding, anemia, unexplained weight loss, vomiting, dysphagia, odynophagia, early satiety, family history of gastrointestinal cancer, previous esophagogastric malignancy) or new onset dyspepsia symptoms in persons older than age 55 years usually requires an upper endoscopy.

III. When confirmation of eradication is necessary, testing should be performed no sooner than 4 weeks after completion of treatment.

## DESCRIPTION:

*Helicobacter pylori* (*H. pylori*) is a spiral shaped bacterium that is found in the gastric mucus layer or adherent to the epithelial lining of the stomach. Helicobacter pylori (H. pylori) remains one of the most common worldwide human infections and is associated with a number of important upper gastrointestinal (GI) conditions including chronic gastritis, peptic ulcer disease, and gastric malignancy. The pathogenic role of H. pylori in peptic ulcer disease, both duodenal and gastric, is well-recognized. Nearly 95% of patients with duodenal ulcers and 80 % of patients with gastric ulcers are found to be infected with H. pylori.

Dyspepsia is clinically defined as nausea, epigastric pain or discomfort experienced on more than seven days of a four-week period. Factors that affect the management of dyspepsia include the patient's age, routine use of NSAIDs, and presence of any alarm symptoms. Alarm symptoms are identified as melena, hematemesis, persistent vomiting,

anemia, acute onset of total dysphagia or involuntary weight loss greater than 5%**.** The test and-treat strategy for H. pylori has been endorsed for the management of uninvestigated dyspepsia by a number of organizations, including the American Gastroenterological Association and the American College of Gastroenterology.

The methods of diagnostic testing for H. pylori can be divided into those that do and those that do not require endoscopy. Endoscopic methods for testing include histology, rapid urease testing, culture and polymerase chain reaction (not widely available for clinical use in the United States).

Nonendoscopic diagnostic tests include: antibody tests, urea breath tests, and stool/fecal antigen tests. Antibody testing relies upon the detection of IgG antibodies specific to H. pylori in serum, whole blood, or urine. IgG antibodies to H. pylori typically become present approximately 21 days after infection and can remain present long after eradication.

The urea breath test identifies active H. pylori infection by way of the organism's urease activity. In a UBT, the patient is given an oral preparation of either nonradioisotope carbon-13- (13C-) labeled urea, or radioactive isotope carbon-14- (14C-) labeled urea. In the presence of H. pylori infection, bacterial urease metabolizes the urea to produce labeled carbon dioxide ($CO_2$) and ammonia. The labeled carbon diffuses into the bloodstream and is excreted by the lungs. Patients are required to be off anti-microbials and bismuth for 2 weeks prior to UBT testing. Fasting for one hour prior to testing is also required.

The stool /fecal antigen test is based on the passage of H. pylori bacteria and antigens in the gastrointestinal tract, identifies H. pylori antigen in the stool by enzyme immunoassay with the use of polyclonal anti-H. pylori antibody. If stool antigen testing is used, no special requirements are needed by the patient such as fasting or stopping medications.

The American College of Gastroenterology no longer recommends serology for the detection of H pylori infection. Several factors limit the usefulness of antibody testing in clinical practice. A meta-analysis evaluated the performance characteristics of several commercially available quantitative serological assays and found their overall sensitivity and specificity to be 85% and 79%, respectively, with no differences between the different assays. It is very important to understand that the positive predictive value (PPV) of antibody testing is greatly influenced by the prevalence of H. pylori infection. In regions where the prevalence of H. pylori is high, such as urban areas or communities with large immigrant populations, the PPV is reasonably good. However, in a community setting with a prevalence of approximately 20% as is the case in much of the United States, though a negative antibody test suggests the absence of infection, a positive test has no value in predicting the presence of an active infection. Therefore in low prevalence populations, antibody tests should be avoided. Further, antibody tests developed using antigens from one region of the world may not perform well when applied to patients in another part of the world. Finally, antibody tests are of little benefit in documenting eradication as results can remain positive for years following successful cure of the infection.

## RATIONALE:

UBT

The UBT® Breath Collection Kit has been cleared for marketing by the FDA. Exalenz Bioscience Ltd has also obtained FDA approval for marketing its BreathID system for the detection of H pylori bacteria. UBT systems are intended for use in the qualitative detection of H. pylori and as an aid in the initial diagnosis and post-treatment monitoring of H. pylori infection in pediatric patients and adult patients (e.g., age 3 and older). The test may be used to monitor treatment if used at least four weeks following completion of therapy. Esophagogastroduodenal (EGD) endoscopy with biopsy is considered the reference method for the diagnosis of Helicobacter pylori (H. pylori). The overall body of literature suggests that noninvasive testing with the urea breath test (UBT) is as effective as endoscopy in managing select patients with uncomplicated upper gastrointestinal symptoms. Overall, the sensitivity and specificity found in studies investigating the diagnostic performance of UBTs have been found to be exceeding 95% in most studies. Test reproducibility has been found to be excellent. The UBT also provides an accurate means of post-treatment testing.

HpSA®

HpSA® has been cleared by the FDA for use in both pediatric patients and adult patients. H. pylori stool antigen (HpSA®) testing provides an acceptable alternative to UBT and is FDA cleared for use in the initial diagnosis,

therapeutic monitoring, eradication confirmation both adults and children. Reported sensitivity and specificity found in studies are 96.1% and 95.7%, respectively. When testing for H. pylori in populations with a low pretest probability of infection, the HpSA provides greater accuracy than serologic testing with only a modest increase in incremental costs.

**CODES:** Number Description

*Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.*

CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.

Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.

Code Key: Experimental/Investigational = (E/I), Not medically necessary/ appropriate = (NMN).

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| **CPT:** | 78267 | Urea breath test, C-14 (isotopic); acquisition for analysis |
| | 78268 | analysis |
| | 83013 | Helicobacter pylori; breath test analysis for urease activity, non-radioactive (e.g., C-13) |
| | 83014 | drug administration and sample collection |
| | 87338 | Infectious agent antigen detection by enzyme immunoassay technique' qualitative or semiquantitative, multiple step method; Helicobacter pylori, stool |



**HCPCS:** No specific code(s)

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| **ICD10:** | B96.81 | Helicobacter pylori (H. pylori) as the cause of diseases classified elsewhere |
| | C16.0-C16.9 | Malignant neoplasm stomach (code range) |
| | C82.50 | Diffuse follicle center lymphoma, unspecified site |
| | C82.59 | Diffuse follicle center lymphoma, extranodal and solid organ sites |
| | C84.90 | Mature T/NK-cell lymphomas, unspecified, unspecified site |
| | C84.99 | Mature T/NK-cell lymphomas, unspecified, extranodal and solid organ sites |
| | C84.A0 | Cutaneous T-cell lymphoma, unspecified, unspecified site |
| | C84.Z0 | Other mature T/NK-cell lymphomas, unspecified site |
| | C84.Z9 | Other mature T/NK-cell lymphomas, extranodal and solid organ sites |
| | C85.10 | Unspecified B-cell lymphoma, unspecified site |
| | C85.19 | Unspecified B-cell lymphoma, extranodal and solid organ sites |
| | C85.20 | Mediastinal (thymic) large B-cell lymphoma, unspecified site |
| | C85.29 | Mediastinal (thymic) large B-cell lymphoma, extranodal and solid organ sites |
| | C85.80 | Other specified types of non-Hodgkin lymphoma, unspecified site |
| | C85.89 | Other specified types of non-Hodgkin lymphoma, extranodal and solid organ sites |
| | C85.90 | Non-Hodgkin lymphoma, unspecified, unspecified site |
| | C85.99 | Non-Hodgkin lymphoma, unspecified, extranodal and solid organ sites |
| | C86.4 | Blastic NK-cell lymphoma |

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| K25.0-K25.9 | Gastric Ulcer (code range) |
| K26.0-K26.9 | Duodenal Ulcer (code range) |
| K27.0-K27.9 | Peptic Ulcer (code range) |
| K28.0-K28.9 | Gastrojejunal Ulcer (code range) |
| K29.00- K29.91 | Gastritis (code range) |
| K30 | Functional dyspepsia |
| Z87.11 | Personal history of peptic ulcer disease |

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* key article

**KEY WORDS:**

Helicobacter pylori, HpSA, H pylori, Urea breath test

# CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

Based upon our review, Helicobacter pylori testing is not addressed in National or regional CMS coverage determinations or policies.