Esophageal pH Monitoring

**File Name:** esophageal_ph_monitoring  
**Origination:** 4/2011  
**Last CAP Review:** 5/2015  
**Next CAP Review:** 5/2016  
**Last Review:** 5/2015

**Description of Procedure or Service**

Acid reflux is the cause of heartburn and acid regurgitation peptic esophagitis, which can lead to esophageal stricture. Acid reflux may also be the cause or a contributing factor in some cases of asthma, posterior laryngitis, chronic cough, dental erosions, chronic hoarseness, pharyngitis, subglottic stenosis or stricture, nocturnal choking, and recurrent pneumonia.

Gastroesophageal reflux disease (GERD) is usually diagnosed by clinical evaluation and treated empirically with a trial of medical management. For patients who do not respond appropriately to medications, or who have recurrent chronic symptoms, endoscopy is indicated to confirm the diagnosis and assess the severity of reflux esophagitis. In some patients, endoscopy is nondiagnostic, or results are discordant with the clinical evaluation. In these cases, further diagnostic testing may be of benefit.

Esophageal monitoring is done through the use of a tube with a pH electrode attached to its tip, which is then passed to almost exactly 5 cm above the upper margin of the lower esophageal sphincter (LES). The electrode is attached to a data logger worn on a waist belt or shoulder strap. Every instance of acid reflux, as well as its duration and pH, is recorded, indicating gastric acid reflux over a 24-hour period. A catheter-free, temporarily implanted device (Bravo™ pH Monitoring System, Medtronic) has been cleared for marketing by the U.S. Food and Drug Administration (FDA) 510(k) process for the purpose of “gastroesophageal pH measurement and monitoring of gastric reflux in adults and children from 4 years of age.” Using endoscopic or manometric guidance, the capsule is temporarily implanted in the esophageal mucosa using a clip. The capsule records pH levels for up to 96 hours and transmits them via radiofrequency telemetry to a receiver worn in the patient’s belt. Data from the recorder are uploaded to a computer for analysis by a nurse or doctor.

Another technology closely related to pH monitoring is impedance-pH monitoring, which incorporates pH monitoring with measurement of impedance, a method of measuring reflux of liquid or gas of any pH. Multiple electrodes are placed along the length of the esophageal catheter. The impedance pattern detected can determine the direction of flow and the substance (liquid or gas). Impedance monitoring is able to identify reflux events in which the liquid is only slightly acidic or non-acidic.

***Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.

**Policy**

BCBSNC will provide coverage for esophageal pH monitoring when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.

**Benefits Application**
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This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

When esophageal pH monitoring is covered

Esophageal pH monitoring using a wireless or catheter-based system may be considered medically necessary for the following clinical indications in adults and children or adolescents able to report symptoms*:

- Documentation of abnormal acid exposure in endoscopy-negative patients being considered for surgical antireflux repair,
- Evaluation of patients after antireflux surgery who are suspected of having ongoing abnormal reflux,
- Evaluation of patients with either normal or equivocal endoscopic findings and reflux symptoms that are refractory to proton pump inhibitor therapy,
- Evaluation of refractory reflux in patients with chest pain after cardiac evaluation and after a 1-month trial of proton pump inhibitor therapy,
- Evaluation of suspected otolaryngologic manifestations of GERD (i.e., laryngitis, pharyngitis, chronic cough) that have failed to respond to at least 4 weeks of proton pump inhibitor therapy,
- Evaluation of concomitant GERD in an adult-onset, nonallergic asthmatic suspected of having reflux-induced asthma.

24-hour catheter-based esophageal pH monitoring may be considered medically necessary in infants or children who are unable to report or describe symptoms of reflux with:

- unexplained apnea;
- bradycardia;
- refractory coughing or wheezing, stridor, or recurrent choking (aspiration);
- persistent or recurrent laryngitis; and
- recurrent pneumonia.

*Esophageal pH monitoring systems should be used in accordance with FDA-approved indications and age ranges

When esophageal pH monitoring is not covered

Catheter-based impedance-pH monitoring is considered not medically necessary.

Policy Guidelines

Esophageal pH monitoring using wired or wireless devices can record the pH of the lower esophagus for a period of one to several days. These devices may aid in the diagnosis of gastroesophageal reflux disease (GERD) in patients who have an uncertain diagnosis after clinical evaluation and endoscopy.

The American Gastroenterological Association released a medical position statement and accompanying technical review on the management of GERD in 2008. Ambulatory impedance-pH, catheter pH, and wireless pH monitoring were all supported as methods to evaluate patients with suspected GERD with otherwise normal endoscopy and no response to proton pump inhibitor therapy. The guideline is classified as a “Grade B” recommendation, denoting fair evidence that the practice improves health outcomes. The guideline additionally states that the wireless pH monitor has superior sensitivity to catheter pH monitoring because of the extended period of recording.

Although impedance-pH testing produces a higher number of positive tests, particularly when compared to traditional or wired pH testing in the setting of concurrent acid suppressive therapy, there is not
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sufficient evidence that these test results are more accurate, nor is there a clear link to improved patient outcomes when using impedance-pH testing compared to other methods of measuring pH. Thus, this testing is considered not medically necessary.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina website at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable service codes: 91034, 91035, 91038

Manometry, when used for pH tip placement, should be considered part of the pH recording.

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources


Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). Special Report: Wireless Esophageal pH Monitoring. TEC Assessments 2006; Volume 21, Tab 2


Medical Director review – 10/2011


Specialty Matched Consultant Advisory Panel 4/18/12


Medical Director review 5/2015
## Esophageal pH Monitoring


### Policy Implementation/Update Information

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/10/11</td>
<td>New policy developed. BCBSNC will provide coverage for esophageal pH monitoring when it is determined to be medically necessary because the medical criteria and guidelines outlined in the policy are met. Specialty Matched Consultant Advisory Panel review 4/27/11. (adn)</td>
</tr>
<tr>
<td>11/8/11</td>
<td>Description section updated to include information regarding impedance-pH monitoring. The following statement was added to the Not Covered section: “24-hour catheter-based impedance-pH monitoring is considered not medically necessary.” Billing/Coding section and Policy Guidelines updated. (adn)</td>
</tr>
<tr>
<td>5/1/12</td>
<td>CPT code 91037 removed from policy as it is not a monitoring code. Specialty Matched Consultant Advisory Panel review 4/18/12. (sk)</td>
</tr>
<tr>
<td>9/18/12</td>
<td>Reference added. Added wireless pH monitoring to the first medically necessary policy statement; third policy statement on 48- to 96-hour, catheter-free, wireless esophageal monitoring deleted. First policy statement under When Not Covered section deleted. Added monitoring must be done in accordance with FDA approved indications and age ranges to policy statement. Policy Guidelines updated. Medical Director review 9/1/12. (sk)</td>
</tr>
<tr>
<td>4/30/13</td>
<td>Specialty Matched Consultant Advisory Panel review 4/17/13. No change to policy statement. (sk)</td>
</tr>
<tr>
<td>5/13/14</td>
<td>Removed “24-hour” from the policy statement on impedance monitoring as catheter-based impedance monitoring for any length of time is considered not medically necessary. No other changes to policy statements. Specialty Matched Consultant Advisory Panel review 4/29/14. Policy noticed 5/13/14 for effective date 7/15/14. (sk)</td>
</tr>
<tr>
<td>8/26/14</td>
<td>Reference added. No change to Policy statement. (sk)</td>
</tr>
<tr>
<td>7/28/15</td>
<td>References updated. (td)</td>
</tr>
</tbody>
</table>

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.