Policy #: 069 **Original policy date: 11/20/08** **Page: 1 of 4**
Revised date: 06/26/09

Title

Esophageal pH Monitoring

Description

Acid reflux is the flow of stomach acid into the esophagus, most often caused by a dysfunction of the gastroesophageal sphincter (a circular band of muscle at the junction of the stomach and esophagus which relaxes to let food pass from the esophagus into the stomach and tightens to prevent stomach contents from refluxing into the esophagus. Acid reflux is the cause of heartburn, acid regurgitation peptic esophagitis, and Barrett's esophagus, as well as esophageal stricture, 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 symptoms and endoscopy, and is treated with a trial of medical management, which usually includes medications that reduce the production of acid in the stomach.

If symptoms do not respond to this treatment approach, a more definitive diagnosis is sought, using esophageal pH monitoring. pH is the quantitative measure of the acidity of a fluid. 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. More recently, a catheter-free, temporarily implanted device (Bravo™ pH Monitoring System, Medtronic) has been approved by the U.S. Food and Drug Administration (FDA) for the purposes of esophageal pH monitoring. Using endoscopic or manometric guidance, the capsule is temporarily implanted in the esophageal mucosa using a pin. (Manometry is the measurement of pressure. The pressure in the esophagus increases at the gastroesophageal junction. Thus manometry can be used instead of direct visualization with an endoscope to place the capsule in the correct location.) The capsule records pH levels for up to 48 hours and transmits them via radio frequency telemetry to a receiver worn on the patient's belt. Data from the recorder are uploaded to a computer for analysis by a nurse or doctor.

When services are covered for all Products including Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS Plus Rx

We cover esophageal pH monitoring using a catheter-based system 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, non-allergic asthmatic suspected of having reflux-induced asthma

We cover 24-hour catheter-based esophageal pH monitoring 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.

When services are not covered for all Products including Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS Plus Rx

We do not cover 48 hour catheter-free, wireless esophageal monitoring for use in esophageal pH monitoring.

We do not cover radiofrequency ablation for Barrett's Esophagus with ablation of tumor(s), polyp(s), or other lesion(s), not amendable to removal by hot biopsy forceps, bipolar cautery or snare technique since it is considered investigational, and does not meet the BCBSMA Medical Technology Assessment Guidelines, #350

Individual consideration

All our medical policies are written for the majority of people with a given condition. Each policy is based on medical science. For many of our medical policies, each individual's unique clinical circumstances may be considered in light of current scientific literature. For consideration of an individual patient, physicians may send relevant clinical information to:

For services already billed	Prior to performance of service
Blue Cross Blue Shield of Massachusetts	Blue Cross Blue Shield of Massachusetts
Provider Appeals	Case Creation/Medical Policy
PO Box 986065	One Enterprise Drive
Boston, MA 02298	Quincy, MA 02171
	Tel: 1-800-327-6716
	Fax: 1-888-641-5330

Managed care guidelines

- Any specialist visit requires a referral for **Medicare HMO Blue**.
- For all other Managed Care plans, any specialist visit requires a referral, except for visits performed by OB/GYN specialists.
- Authorization is required for an inpatient admission.

Indemnity and PPO guidelines

All authorization requirements are determined by the individual's subscriber certificate, however:

- Authorizations are required for all inpatient services.
- Authorizations are not required for most outpatient services as determined by the individual's subscriber certificate.
- Referrals to a specialist are not required.

Coding information

Procedure codes are from current CPT, HCPCS Level II, Revenue Code, and/or ICD-9-CM manuals, as recommended by the American Medical Association, Centers for Medicare and Medicaid Services and

American Hospital Associations. Blue Cross Blue Shield Association national codes may be developed when appropriate.

The following code is included below for informational purposes. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

CPT code - 91010 – Esophageal motility study (manometric study of the esophageal junction) Manometry, when used for pH tip placement, should be considered part of the pH recording.

CPT code – 91034 - Esophagus, gastroesophageal reflux test; with nasal catheter pH electrode(s) placement, recording, analysis and interpretation

CPT code – 91035 - Esophagus, gastroesophageal reflux test; with mucosal attached telemetry pH electrode placement, recording, analysis, and interpretation. The device may be placed with either endoscopic or manometry guidance.

CPT code - 91010 (manometry) might be used, followed on a subsequent day with

CPT code - 91033 (esophageal pH monitoring), which represents the interpretation of the recorded measurements.

HCPCS No code

Type of Service Medical

Place of Service Outpatient, Physician's office

See footnote [2] for ICD 9 procedure to diagnosis codes.

Policy update history

12/01/08 – New medical policy based on review of literature regarding esophageal pH monitoring using a catheter-based system for certain clinical indications in adults and children. Reviewed 11/08 MPG – Gastroenterology, Nutrition & Organ Transplants, no changes in coverage were made. 2/09 Updated during review of BCBSA policy #2.01.20, references 8-10 added. No change in policy statement. Updated 3/09 to removed deleted code and formatting changes performed. 3/09, Updated based on review of BCBSA policy # 2.01.80 to add non-coverage for radiofrequency ablation as a treatment for Barrett's esophagus. Format updated , definitions removed.

Footnotes

[1] Based on Blue Cross Blue Shield Association medical policy # 2.01.20, Esophageal pH Monitoring.

[2] ICD-9 CM diagnoses codes

References:

References for footnote 1:

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2. Pandolfino JE, Richter JE, Ours T et al. Ambulatory esophageal pH monitoring using a wireless system. Am J Gastroenterol 2003; 98(4):740-9.

3. Prakash C, Clouse RE. Value of extended recording time with wireless pH monitoring in evaluating gastroesophageal reflux disease. Clin Gastroenterol Hepatol 2005; 3(4):329-34.
4. Wireless Esophageal pH Monitoring. TEC Special Report 2006
5. des Varannes S, Mion F, Ducrotte P et al. Simultaneous recordings of oesophageal acid exposure with conventional pH monitoring and a wireless system (Bravo). Gut 2005; 54(12):1682-6.
6. Tseng D, Rizvi AZ, Fennerty MB et al. Forty-eight-hour pH monitoring increases sensitivity in detecting abnormal esophageal acid exposure. J Gastrointest Surg 2005; 9(8):1043-51.
7. Hirano I, Richter JE; Practice Parameters Committee. ACG practice guidelines: esophageal reflux testing. Am J Gastroenterol 2007; 102(3):668-85.
8. Wenner J, Johnsson F, Johansson J et al. Wireless esophageal pH monitoring is better tolerated than the catheter-based technique: results from a randomized cross-over trial. Am J Gastroenterol 2007; 102(2):239-45.
9. Schneider JH, Kramer KM, Konigsrainer A et al. Ambulatory pH: monitoring with a wireless system. Surg Endosc 2007; 21(11):2076-80.
10. Wenner J, Johansson J, Fohnsson F et al. Optimal thresholds and discriminatory power of 48-h wireless esophageal pH monitoring in the diagnosis of GERD. Am J Gastroenterol 2007; 102(9):1862-9.

[2] **ICD-9 Diagnosis codes:**
427.89 - bradycardia
476.0 - laryngitis
493.00 - laryngitis, chronic
493.90 - asthma without mention of status asthmaticus code range
507.0 - aspiration pneumonia
530.81 - esophageal reflux/gastroesophageal reflux disease
770.81-770.89 - respiratory problems (including apnea) originating in prenatal period, code range
780.57 - sleep apnea
784.99 - choking sensation
786.03 - apnea
786.07 - wheezing
786.1 - stridor
786.2 – cough

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