



MASSACHUSETTS

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Medical Policy

Esophageal pH Monitoring

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Policy Number: 069

BCBSA Reference Number: 2.01.20 (For Plan internal use only)

Related Policies

None

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity

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:^a

- Documentation of abnormal acid exposure in endoscopy-negative individuals being considered for surgical anti-reflux repair,
- Evaluation of individuals after anti-reflux surgery who are suspected of having ongoing abnormal reflux,
- Evaluation of individuals with either normal or equivocal endoscopic findings and reflux symptoms that are refractory to proton pump inhibitor therapy,
- Evaluation of refractory reflux in individuals 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, or
- Evaluation of concomitant GERD in an adult-onset, non-allergic asthmatic suspected of having reflux-induced asthma.

Twenty-four-hour catheter-based esophageal pH monitoring may be **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,
- Recurrent pneumonia.

Twenty-four-hour catheter-based impedance pH monitoring may be considered **INVESTIGATIONAL**

in individuals with established gastroesophageal reflux disease (GERD) on proton pump inhibitor (PPI) therapy, whose symptoms have not responded adequately to twice-daily PPI therapy, in order to define refractory GERD.

^aEsophageal pH monitoring systems should be used in accordance with FDA-approved indications and age ranges.

Prior Authorization Information

Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

| | Outpatient |
|---------------------------------------|--|
| Commercial Managed Care (HMO and POS) | Prior authorization is not required . |
| Commercial PPO and Indemnity | Prior authorization is not required . |

CPT Codes / HCPCS Codes / ICD Codes

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.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The above **medical necessity criteria MUST be met for the following codes to be covered for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:**

CPT Codes

| CPT codes: | Code Description |
|------------|---|
| 91034 | Esophagus, gastroesophageal reflux test; with nasal catheter pH electrode(s) placement, recording, analysis and interpretation |
| 91035 | Esophagus, gastroesophageal reflux test; with mucosal attached telemetry pH electrode placement, recording, analysis and interpretation |

The following ICD Diagnosis Codes are considered medically necessary when submitted with the CPT codes above if **medical necessity criteria** are met

ICD-10 Diagnosis Codes

| ICD-10-CM Diagnosis codes: | Code Description |
|----------------------------|--|
| G47.30 | Sleep apnea, unspecified |
| J37.0 | Chronic laryngitis |
| J44.0 | Chronic obstructive pulmonary disease with acute lower respiratory infection |
| J44.1 | Chronic obstructive pulmonary disease with (acute) exacerbation |
| J44.9 | Chronic obstructive pulmonary disease, unspecified |
| J45.20 | Mild intermittent asthma, uncomplicated |
| J45.21 | Mild intermittent asthma with (acute) exacerbation |

| | |
|---------|--|
| J45.22 | Mild intermittent asthma with status asthmaticus |
| J45.30 | Mild persistent asthma, uncomplicated |
| J45.31 | Mild persistent asthma with (acute) exacerbation |
| J45.32 | Mild persistent asthma with status asthmaticus |
| J45.40 | Moderate persistent asthma, uncomplicated |
| J45.41 | Moderate persistent asthma with (acute) exacerbation |
| J45.42 | Moderate persistent asthma with status asthmaticus |
| J45.50 | Severe persistent asthma, uncomplicated |
| J45.51 | Severe persistent asthma with (acute) exacerbation |
| J45.52 | Severe persistent asthma with status asthmaticus |
| J45.991 | Cough variant asthma |
| K21.00 | Gastro-esophageal reflux disease with esophagitis, without bleeding |
| K21.01 | Gastro-esophageal reflux disease with esophagitis, with bleeding |
| K21.9 | Gastro-esophageal reflux disease without esophagitis |
| P22.8 | Other respiratory distress of newborn |
| P22.9 | Respiratory distress of newborn, unspecified |
| P24.30 | Neonatal aspiration of milk and regurgitated food without respiratory symptoms |
| P24.31 | Neonatal aspiration of milk and regurgitated food with respiratory symptoms |
| P24.81 | Other neonatal aspiration with respiratory symptoms |
| P28.2 | Cyanotic attacks of newborn |
| P28.30 | Primary sleep apnea of newborn, unspecified |
| P28.31 | Primary central sleep apnea of newborn |
| P28.32 | Primary obstructive sleep apnea of newborn |
| P28.33 | Primary mixed sleep apnea of newborn |
| P28.39 | Other primary sleep apnea of newborn |
| P28.40 | Unspecified apnea of newborn |
| P28.41 | Central neonatal apnea of newborn |
| P28.42 | Obstructive apnea of newborn |
| P28.43 | Mixed neonatal apnea of newborn |
| P28.49 | Other apnea of newborn |
| P28.5 | Respiratory failure of newborn |
| P28.81 | Respiratory arrest of newborn |
| P28.89 | Other specified respiratory conditions of newborn |
| P29.12 | Neonatal bradycardia |
| P84 | Other problems with newborn |
| R05.3 | Chronic cough |
| R05.4 | Cough syncope |
| R05.8 | Other specified cough |
| R05.9 | Cough, unspecified |
| R06.1 | Stridor |
| R06.2 | Wheezing |
| R06.81 | Apnea, not elsewhere classified |
| Z87.01 | Personal history of pneumonia (recurrent) |

The following CPT codes are considered investigational for **Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:**

CPT Codes

| CPT codes: | Code Description |
|------------|---|
| 91037 | Esophageal function test, gastroesophageal reflux test with nasal catheter intraluminal impedance electrode(s) placement, recording, analysis and interpretation; |

| | |
|-------|---|
| 91038 | Esophageal function test, gastroesophageal reflux test with nasal catheter intraluminal impedance electrode(s) placement, recording, analysis and interpretation; prolonged (greater than 1 hour, up to 24 hours) |
|-------|---|

Description

Gastroesophageal Reflux Disease

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

Diagnosis

Gastroesophageal reflux disease is most commonly 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).

Monitoring

Esophageal monitoring is done using a tube with a pH electrode attached to its tip, which is then passed into the esophagus to approximately 5 cm above the upper margin of the lower esophageal sphincter. The electrode is attached to a data recorder worn on a waist belt or shoulder strap. Every instance of acid reflux, as well as its duration and pH, is recorded over a 24-hour period. Wireless pH monitoring is achieved using endoscopic or manometric guidance to attach the pH measuring capsule to 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 on 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 measurements 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 can identify reflux events in which the liquid is only slightly acidic or nonacidic.

Summary

Description

Esophageal pH monitoring, using wired or wireless devices, can record the pH of the lower esophagus for a period of several days. Impedance pH monitoring measures electrical impedance in the esophagus to evaluate reflux episodes concurrent with changes in pH. These tests are used for certain clinical indications in the evaluation of gastroesophageal reflux disease (GERD).

Summary of Evidence

For individuals who have gastroesophageal reflux disease (GERD) who receive catheter-based pH monitoring, the evidence includes cross-sectional studies evaluating test performance in different populations. Relevant outcomes are test validity, symptoms, and functional outcomes. Positive pH monitoring tests correlate with endoscopically defined GERD and with GERD symptoms, but because there is no reference standard for clinical GERD, diagnostic characteristics cannot be determined. There are no studies of clinical utility showing improved outcomes, and the chain of evidence supporting the utility of the test is weak. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have GERD who receive wireless pH monitoring, the evidence includes a systematic review and cross-sectional studies evaluating test performance and diagnostic yield in different populations. Relevant outcomes are test validity, symptoms, and functional outcomes. Positive wireless pH monitoring tests correlate with endoscopically defined GERD and GERD symptoms, but because

there is no reference standard for clinical GERD, diagnostic characteristics cannot be determined. Some studies have shown higher positive test rates with prolonged wireless monitoring compared with catheter-based pH monitoring, but the effect of this finding on patient outcomes is uncertain. There are no studies of clinical utility showing improved outcomes, and the chain of evidence supporting the utility of the test is weak. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have GERD who receive impedance pH testing, the evidence includes cross-sectional studies evaluating test performance and diagnostic yield in different populations. Relevant outcomes are test validity, symptoms, and functional outcomes. Positive impedance pH tests correlate with endoscopically defined GERD and with GERD symptoms, but because there is no reference standard for clinical GERD, diagnostic characteristics cannot be determined. Some studies have shown higher positive test rates with impedance pH testing compared with pH testing alone, but the effect of this finding on patient outcomes is uncertain. There are no studies of clinical utility showing improved outcomes, and the chain of evidence supporting the utility of the test is weak. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Additional Information

Clinical input obtained in 2010 has suggested that catheter-based and wireless pH monitoring may aid in the diagnosis of GERD in patients who have an uncertain diagnosis after clinical evaluation and endoscopy. Esophageal pH monitoring is not considered a standard diagnostic test for most patients with GERD, but there is strong clinical support for its use in selected subpopulations for certain indications. Clinical guidelines support pH testing for patients with GERD being considered for surgical intervention. Wireless pH monitoring measurements appear to correlate closely to catheter-based monitoring and may be more comfortable for patients or may be an option for patients unable to tolerate catheter-based monitoring.

Policy History

| Date | Action |
|---------|--|
| 1/2025 | Annual policy review. References updated. Policy statements unchanged. |
| 1/2024 | Annual policy review. Policy updated with literature review through September 25, 2023; references added. Minor editorial refinements to policy statements; intent unchanged. |
| 1/2023 | Medicare information removed. See MP #132 Medicare Advantage Management for local coverage determination and national coverage determination reference. |
| 1/2023 | Annual policy review. Policy clarified. Not Medically Necessary policy statement language changed to Investigational and other minor editorial refinements to policy statements; intent unchanged. |
| 10/2022 | Clarified coding information. |
| 1/2022 | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 10/2021 | Clarified coding information |
| 1/2021 | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 10/2020 | Clarified coding information |
| 1/2020 | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 1/2019 | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 1/2018 | Annual policy review. New references added. |
| 10/2015 | Clarified coding information. |
| 12/2014 | Clarified coding information. |
| 9/2014 | Annual review. New references added. |
| 5/2014 | Updated Coding section with ICD10 procedure and diagnosis codes. Effective 10/2015. |

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|----------------|---|
| 4/2014 | Clarified coding information. |
| 12/2013 | Annual review. Removed "24-hour" from the policy statement on impedance monitoring; catheter-based impedance monitoring for any length of time is considered not medically necessary. Effective 12/1/2013. Removed ICD-9 diagnosis codes 427.89, 462; 464.00; 464.01; 486; 493.00; 493.01; 493.02; 493.81; 493.90; 493.91; 493.92 as these do not meet the intent of the policy. ICD-9 diagnosis code V12.61 was added as it meets the intent of the policy. |
| 2/2013 | Annual review. Changes to policy statements. Effective 2/4/2013 |
| 11/2011-4/2012 | Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements. |
| 12/2011 | Annual policy review. Changes to policy statements. |
| 11/2010 | Reviewed - Medical Policy Group - Gastroenterology, Nutrition and Organ Transplantation. No changes to policy statements. |
| 8/2010 | Annual policy review. Changes to policy statements. |
| 11/2009 | Reviewed - Medical Policy Group - Gastroenterology, Nutrition and Organ Transplantation. No changes to policy statements. |
| 11/2008 | Reviewed - Medical Policy Group - Gastroenterology, Nutrition and Organ Transplantation. No changes to policy statements. |
| 12/2008 | New policy, effective 12/01/2008, describing covered and non-covered indications. |

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

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