I. ACTION

New Policy
X Revising Policy Number CMS05.05
Superseding Policy Number
Archiving Policy Number
Retiring Policy Number

II. POLICY DISCLAIMER

Johns Hopkins HealthCare LLC (JHHC) provides a full spectrum of health care products and services for Employer Health Programs, Priority Partners, Advantage MD and US Family Health Plan. Each line of business possesses its own unique contract and guidelines which, for benefit and payment purposes, should be consulted to know what benefits are available for reimbursement.

Specific contract benefits, guidelines or policies supersede the information outlined in this policy.

III. POLICY


For Advantage MD: Local Coverage Determinations (LCDs) do not exist at this time. Medicare does not have a National Coverage Determination (NCD) for Exhaled Nitric Oxide, (Accessed June 11, 2018).
IV. POLICY CRITERIA

A. When benefits are provided under the member’s contract, JHHC considers the measurement of exhaled nitric oxide medically necessary for the management of asthma patients.

B. Unless specific benefits are provided under the member’s contract, JHHC considers the measurement of exhaled nitric oxide not medically necessary for all other disorders because it is considered experimental and investigational, as it does not meet Technology Evaluation Criteria (TEC) #2-5. Refer to: CMS01.00 Medical Policy Introduction.

V. DEFINITIONS

Nitric Oxide: Nitric Oxide (NO) within the respiratory system regulates vascular and bronchial tone (promoting dilation of both vessels and airways), facilitates the coordinated beating of ciliated epithelial cells, and acts as an important neurotransmitter for non-adrenergic, non-cholinergic neurons that run in the bronchial wall. This molecule can be detected in exhaled gas as the fraction of exhaled NO (FeNO), which varies in health and disease (Dweik, 2018).

Nitric Oxide Expired Gas Determination: NO level is measured using specialized equipment and under the direct supervision of a clinician. The patient is instructed to exhale, place the testing device in the mouth, and inhale to lung capacity. The clinician monitors the patient to ensure that a steady compliance inhalation and exhalation are performed. The process is repeated and the patient's tinet's NO level is determined by the device, which uses the sensitivity of a chemiluminescence gas analyzer and integrated software to measure NO molecules at very low concentrations.

VI. BACKGROUND

Nitric oxide (NO) is normally produced by the human respiratory tract mucosa and is a mediator involved in airway inflammation. Increases in fractional exhaled NO (FeNO) are thought to reflect the intensity of eosinophilic inflammation of the bronchial mucosa and serve as markers of airway inflammation. Measurement changes in FeNO in expired breath serve as an adjunct to established criteria and laboratory assessments of asthma.

High levels of FeNO are generally present with asthma in exhaled breath. These measurements return to normal after treatment with glucocorticoids. Measurement of nitric oxide (NO) concentration in exhaled breath allows for a quantitative, noninvasive, simple method of determining airway inflammation (Chen, 2016).

Utilizing FeNO offers additional advantages for patient care including the detection of eosinophilic airway inflammation and determining the likelihood of corticosteroid responsiveness. Furthermore, FeNO allows for the monitoring of airway inflammation to determine corticosteroid needs (Dweik, 2011). Some factors that influence FeNO output include measurement technique, exhalation flow rate, age, height, and smoking status. For FeNO measurements and interpretations, please refer to the official ATS Clinical Practice Guideline in the reference section below.

FeNO, or fractional exhaled nitric oxide measurements have been used for asthma management and used to differentiate asthmatic from non-asthmatic patients with bronchial asthma (Chen, 2016). It is important to note that while FeNO measurements have been standardized, there is no uniform reference guideline that is being utilized in clinical practice by healthcare providers.
VII. CODING DISCLAIMER

CPT Copyright 2018 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association.

Note – The following CPT/HCPCS codes are included below for informational purposes. Inclusion or exclusion of a CPT/HCPCS code(s) below does not signify or imply member coverage or provider reimbursement. The member’s specific benefit plan determines coverage and referral requirements. All inpatient admissions require preauthorization.

<table>
<thead>
<tr>
<th>Compliance with the provision in this policy may be monitored and addressed through post payment data analysis and/or medical review audits</th>
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<tr>
<td>Employer Health Programs (EHP) refer to specific Summary Plan Description (SPD). If there is no criteria in the SPD, apply the Medical Policy criteria.</td>
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<td>Priority Partners (PPMCO) refer to COMAR guidelines and PPMCO SPD then apply the Medical Policy criteria.</td>
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<tr>
<td>US Family Health Plan (USFHP), TRICARE Medical Policy supersedes JHHC Medical Policy. If there is no Policy in TRICARE, apply the Medical Policy Criteria.</td>
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<tr>
<td>Advantage MD, LCD and NCD Medical Policy supersedes JHHC Medical Policy. If there is no LCD or NCD, apply the Medical Policy Criteria.</td>
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VIII. CODING INFORMATION

NO PREAUTHORIZATION REQUIRED

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<th>CPT® CODES</th>
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ICD10 CODES ARE FOR INFORMATIONAL PURPOSES ONLY

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<td>Pulmonary Function-General</td>
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IX. REFERENCE STATEMENT

Analyses of the scientific and clinical references cited below were conducted and utilized by the Johns Hopkins HealthCare LLC (JHHC) Medical Policy Team during the development and implementation of this medical policy. Per NCQA standards, the Medical Policy Team will continue to monitor and review any newly published clinical evidence and adjust the references below accordingly if deemed necessary.

X. REFERENCES


Chen, F.J., Liao, H., Huang, X.Y., Xie, C.M. Importance of Fractional Exhaled Nitric Oxide in Diagnosis of Bronchiectasis Accompanied with Bronchial Asthma.


XI. APPROVALS
Historic Effective Dates: 03/03/2008, 03/02/09, 06/04/10, 08/01/11, 05/29/12, 09/05/14, 09/02/16, 08/21/18