



IEHP UM Subcommittee Approved Authorization Guideline			
Guideline	Fractional Exhaled Nitric Oxide (FENO)	Guideline #	UM_DIA 09
		Original Effective Date	5/14/2014
Section	Diagnostic	Revision Date	9/19/18

COVERAGE POLICY

Based on a review of the currently available literature, there is insufficient evidence to support the use of FE_{NO} measurement in the diagnosis or management of asthma or other pulmonary disorders. Therefore, the IEHP UM Subcommittee FE_{NO} is not a covered benefit at this time.

COVERAGE LIMITATIONS AND EXCLUSIONS

FE_{NO} is listed as a non-covered CPT code (95012) under Medi-cal and is not found in Medi-care Local or National Coverage Determinations. MCG Health 21st edition does not reference FE_{NO} in any asthma guidelines or respiratory disorders. A search using the CPT code results in advisory code A-MPC: Diagnostic or therapeutic procedure that does not indicate a specific need for hospitalization or care; use diagnosis or other procedure code for searching if patient requires inpatient services (MCG Health, 2017).

ADDITIONAL INFORMATION

1. Nitric Oxide (NO) is a gaseous molecule present in virtually all mammalian organ systems. It is produced by the action of the enzyme Nitric Oxide Synthase (NOS) on the amino acid L-arginine. One isoform of this enzyme is inducible by inflammatory cytokines and inhibited by glucocorticoids. Thus, NO has been investigated as a surrogate biomarker of underlying inflammation in various diseases. In the lungs, NO is a bronchodilator; it causes relaxation of bronchial smooth muscles. It is also thought to have anti-inflammatory properties due to its action as an antioxidant.
 Patients with asthma and other inflammatory respiratory disorders including Chronic Obstructive Pulmonary Disease (COPD) have abnormally elevated levels of NO in their exhaled breath. The observation that FE_{NO} levels in asthmatics decrease following treatment with inhaled corticosteroids has led to the theory that FE_{NO} may be a useful biological marker of inflammation in patients with inflammatory respiratory conditions. As a surrogate marker of inflammation and oxidative stress, FE_{NO} is suggested to have many useful clinical applications for diagnosing and monitoring asthma, COPD, cystic fibrosis, lung cancer, and other conditions. FE_{NO} is currently being used to diagnose disease and identify patients who are likely responders to anti-inflammatory treatment. Measurement of FE_{NO} levels is less cumbersome and invasive than current techniques for monitoring the status of underlying inflammation such as bronchoscopy (with lavage and biopsy), or analysis by induced sputum. Therefore, there has been interest in noninvasive techniques such as FE_{NO} to assess underlying pathogenic chronic inflammation. (Dweik et al, 2011)

CLINICAL/REGULATORY RESOURCE

MEDICARE

Medicare does not have a National Coverage Determination (NCD) or a Local Coverage Determination (LCD) for California for the measurement of FE_{NO} (Fractional Exhaled Nitric Oxide Concentration) for the diagnosis or management of asthma or other pulmonary disorders (Medicare coverage database, 2018).

MEDI-CAL

CPT code 95012 is the appropriate code describing Exhaled Nitric Oxide Measurement. According to the Medi-Cal Benefit Manual, this procedure is not a covered benefit. (Medi-Cal coverage database, 2018).

DEFINITION OF TERMS

Measurement of fractional nitric oxide (NO) concentration in exhaled breath (FE_{NO}) is a non-invasive test for which commercially available products exist. Use has been suggested in tailoring asthma medications, detecting eosinophilic airway inflammation, determining the likelihood of corticosteroid responsiveness, monitor airway inflammation to determine the potential need for corticosteroid and unmasking of otherwise unsuspected non-adherence to corticosteroid therapy.

REFERENCES

1. American Thoracic Society/European Respiratory Society. ATS/ERS recommendations for standardized procedures for the online and offline measurement of exhaled lower respiratory nitric oxide and nasal nitric oxide, 2005. *Am J Respir Crit Care Med* 2005;171:912-930.
2. CA.gov. Department of Health Care Services: Medi-Cal Coverage Database. Accessed 07/31/2018 at <http://www.medi-cal.ca.gov/>
3. CMS.gov Centers for Medicaid and Medicare Services website: Medicare Coverage Database Accessed 07/31/2018 at <http://www.cms.hhs.gov/mcd/search>
4. Dweik, RA, PB Boggs, SC Erzurum, CG Irvin, MW Leigh, JO Lundberg, AC Olin, AL Plummer, DR Taylor, and AP American. "An official ATS clinical practice guideline: interpretation of exhaled nitric oxide levels (FE_{NO}) for clinical applications." *Am J Respir Crit Care Med*. September 01, 2011. 184(5): 602-15. Accessed August 13, 2018. <https://www.ncbi.nlm.nih.gov/pubmed/21885636>.
5. MCG Health, 2017 21st edition. "95012 Exhaled Nitric Oxide Measurement." Accessed August 13, 2018. <https://careweb.careguidelines.com/ed21/index.html>. Search performed under asthma guidelines and for specific CPT coding

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