IEHP UM Subcommittee Approved Authorization Guideline

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<th>Guideline</th>
<th>Fractional Exhaled Nitric Oxide (FENO)</th>
<th>Guideline #</th>
<th>UM_DIA 09</th>
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<tbody>
<tr>
<td>Original Effective Date</td>
<td>5/14/2014</td>
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<tr>
<td>Section</td>
<td>Diagnostic</td>
<td>Revision Date</td>
<td>9/19/18</td>
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COVERAGE POLICY

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

COVERAGE LIMITATIONS AND EXCLUSIONS

FE\textsubscript{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 21\textsuperscript{st} edition does not reference FE\textsubscript{NO} in any asthma guidelines or respiratory disorders. A search using the CPT code results in a 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\textsubscript{NO} levels in asthmatics decrease following treatment with inhaled corticosteroids has led to the theory that FE\textsubscript{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\textsubscript{NO} is suggested to have many useful clinical applications for diagnosing and monitoring asthma, COPD, cystic fibrosis, lung cancer, and other conditions. FE\textsubscript{NO} is currently being used to diagnose disease and identify patients who are likely responders to anti-inflammatory treatment. Measurement of FE\textsubscript{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\textsubscript{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 \( \text{FE}_{\text{NO}} \) (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 (\( \text{FE}_{\text{NO}} \)) 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**

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