



Measure Title USE OF SPIROMETRY TESTING IN THE ASSESSMENT AND DIAGNOSIS OF COPD.

Disease State COPD Indicator Classification¹ Diagnosis

Strength of Recommendation² C

Physician Specialties Allergy, Critical Care Medicine, Family Practice, Infectious Disease, Gerontology, Internal Medicine

Clinical Rationale Disease Burden

- COPD is the fourth leading cause of death in America, claiming the lives of 120,000 Americans in 2002.[1]
• In 2003, 10.7 million U.S. adults were estimated to have COPD.[2] However, close to 24 million adults have evidence of impaired lung functioning, suggesting an under diagnosis of COPD.[2]

Reason for Indicated Intervention or Treatment

- Russell et. al. suggest that "objective assessments of pulmonary function are necessary for the diagnosis of asthma because medical history and physical examination are not reliable means of excluding other diagnoses or of characterizing the status of lung impairment."[3]
• Furthermore, "although physicians generally seem able to identify a lung abnormality as obstructive [4], they have a poor ability to assess the degree of airflow obstruction [5] or to predict whether that obstruction is reversible." [3]
• While approximately two thirds of patients diagnosed with COPD are identified without the use of a spirometer, [5] this can lead to misdiagnosis.[3] For example, COPD is often misdiagnosed as asthma. This is problematic because guidelines for assessment and management of the two diseases are quite different.[6]
• The peer-reviewed journal of the American College of Chest Physicians (CHEST) states, "Although there is no cure for COPD, early detection is important for effective disease management... A predominant number of patients with early stage COPD receive initial medical care through primary care physicians; however, many remain undiagnosed because their physicians do not regularly screen for the disease. Without the use of spirometry by primary care physicians, nearly half of our patients with COPD will remain undiagnosed."[6]
• Spirometers represent an effective and objective way to measure the volume and flow of air that can be inhaled and exhaled.[5]

Evidence supporting Intervention or Treatment

- In one large trial, physicians were asked prior to and following presentation of spirometry test results if they thought airflow obstruction was present and if they planned to change management based on the results. A new diagnosis of unsuspected airflow obstruction was made by the physician in 93 patients (9%), and a prior diagnosis of airflow obstruction was removed after spirometry in 115 patients (11%). After viewing the spirometry results, physicians reported that they would change patient management in 154 patients (15%).[7]
• Another study showed that "spirometry testing is a much more accurate

diagnostic tool than the judgment of a doctor based on past medical history... when asked to predict a diagnosis before the use of spirometry testing, 61% of the tests gave a result that doctors predicted as being unlikely. The study also showed that doctors had difficulty in identifying the reversibility of airflow obstruction in patients in whom they correctly predicted obstruction.” [3]

Clinical Recommendations

- The American Association for Respiratory Care (AARC) clinical practice guideline recommends the use of spirometry in the diagnosis and early prevention of COPD as it is, “safe, affordable, sensitive, and relatively specific, with the ability to detect lung-function abnormalities in asymptomatic patients.” [8]
- The Institute for Clinical Systems Improvement (ICSI) recommends that the diagnosis of COPD should be suspected based on the patient's medical history and physical examination, but requires spirometry to determine the degree of airflow limitation. [9]

Source	Health Plan Employer Data and Information Set (HEDIS®) 2006 Technical Specification
Denominator	Continuously enrolled members ages 42 or older by the end of the measurement year, who had a new diagnosis or new active chronic obstructive pulmonary disease (COPD) in the one year period starting six months prior to the measurement year.
Denominator Exclusion	Exclude all members with any COPD related diagnosis within the 1-720 days prior to the index diagnosis date.
Numerator	Members who received spirometry testing in the 720 days prior through 180 days following the index diagnosis date.
Interpretation of Score	High score implies better performance
Physician Attribution	Score all physicians (in the selected specialties) who saw the member during the 720 days prior through 180 days following the index diagnosis date.
External Files Required for Analysis	None.
References	

1. National Center for Health Statistics. *Report of Final Mortality Statistics, 2002*.
2. Mannino, D.M., et al., *Chronic obstructive pulmonary disease surveillance--United States, 1971-2000*. *Respir Care*, 2002. **47**(10): p. 1184-99.
3. Russell, N.J., et al., *Quantitative assessment of the value of spirometry*. *Thorax*, 1986. **41**(5): p. 360-3.
4. Shim, C.S. and M.H. Williams, Jr., *Evaluation of the severity of asthma: patients versus physicians*. *Am J Med*, 1980. **68**(1): p. 11-3.
5. Lee, T.A., B. Bartle, and K.B. Weiss, *Spirometry Use in Clinical Practice Following Diagnosis of COPD*. *Chest*, 2006. **129**(6): p. 1509-15.
6. Buffels, J., et al., *Office spirometry significantly improves early detection of*

- COPD in general practice: the DIDASCO Study.* Chest, 2004. **125**(4): p. 1394-9.
7. Dales, R.E., et al., *Spirometry in the primary care setting: influence on clinical diagnosis and management of airflow obstruction.* Chest, 2005. **128**(4): p. 2443-7.
 8. *AARC (American Association for Respiratory Care) clinical practice guideline. Spirometry.* Respir Care, 1991. **36**(12): p. 1414-7.
 9. *ICSI, Chronic obstructive pulmonary disease.*, Institute for Clinical Systems Improvement (ICSI): Bloomington (MN). p. 66 p.

¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)
Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

Strength of Recommendation Based on a Body of Evidence

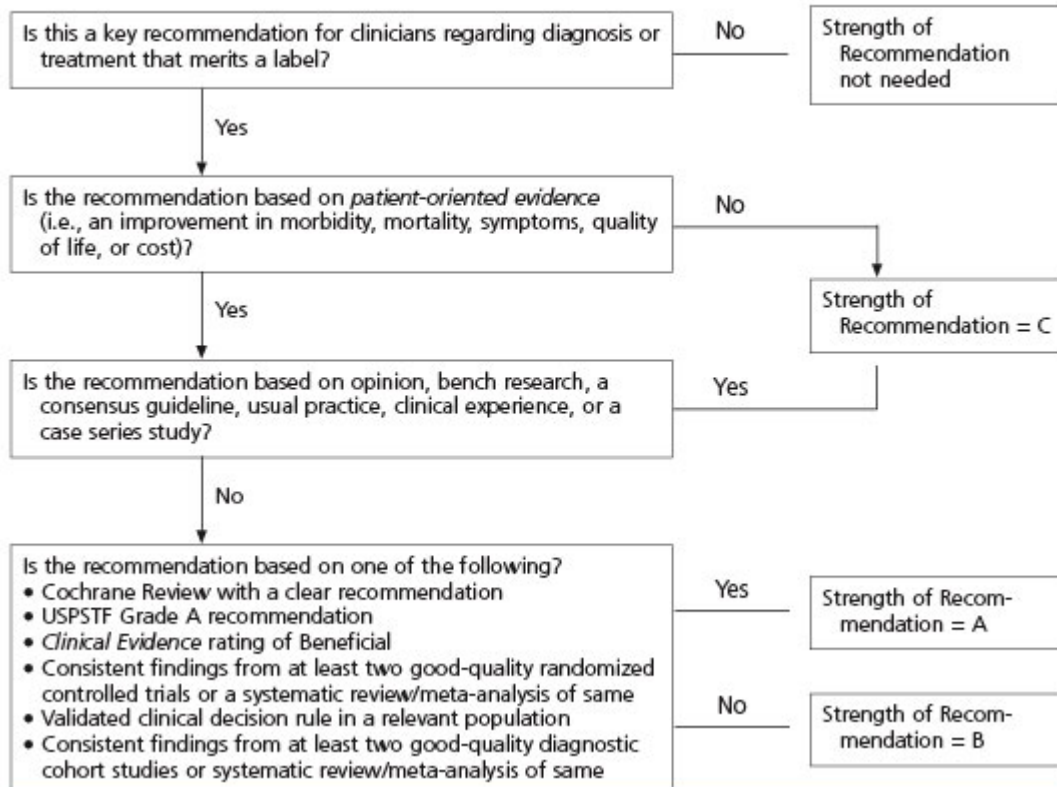


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)