Physician Consortium for Performance Improvement

Clinical Performance Measures

Chronic Obstructive Pulmonary Disease (COPD)

Tools Developed by Physicians for Physicians

Provided by:

Physician Consortium for Performance Improvement®

Purpose

This measurement tool provides physicians with *evidence-based* clinical performance measures, including a data collection flowsheet, that may be useful for quality improvement activities within physician practices. The ability to track changes over time is integral to the concept of continuous quality improvement in patient care. Evidence-based clinical performance measures have been identified as a means for tracking these changes.

These measures are provided to physicians by the **Physician Consortium for Performance Improvement®** (the Consortium). The Consortium is a physician-led initiative representing more than 100 national medical specialty and state medical societies; the Council of Medical Specialty Societies; American Board of Medical Specialties and its member-boards; experts in methodology and data collection; the Agency for Healthcare Research and Quality; and Centers for Medicare & Medicaid Services.The Consortium's vision is to fulfill the responsibility of physicians to patient care, public health, and safety by becoming the leading source organization for evidence-based[1] clinical performance measures and outcomes reporting tools for physicians.

Performance measures must be designed based on their intended purpose.[2,3] The measures presented here are intended to facilitate individual physician quality improvement. Therefore, there are no minimum sample size requirements, and the suggested feedback is sufficiently detailed to pinpoint areas of concern for the physician (eg, spirometry was performed on a patient with COPD). The measures defined in this measurement tool are not intended, and should not be used, for physician comparison.[4]

Performance measures are not clinical guidelines; rather, the measures are derived from evidence-based clinical guidelines and indicate whether or not or how often a process of care or outcome of care occurs.[2] Performance measures provide important information to a physician, allowing him or her to enhance the quality of care delivered to patients.

Physician Performance Measures (Measures) and related data specifications, developed by the Physician Consortium for Performance Improvement® (the Consortium), are intended to facilitate quality improvement activities by physicians.

These measures are intended to assist physicians in enhancing quality of care. Measures are designed for use by any physician who manages the care of a patient for a specific condition or for prevention. These performance measures are not clinical guidelines and do not establish a standard of medical care. The Consortium has not tested its measures for all potential applications. The Consortium encourages the testing and evaluation of its measures.

Measures are subject to review and may be revised or rescinded at any time by the Consortium. The measures may not be altered without the prior written approval of the Consortium. Measures developed by the Consortium, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, eg, use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of measures for commercial gain, or incorporation of the measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the measures require a license agreement between the user and American Medical Association, on behalf of the Consortium. Neither the Consortium nor its members shall be responsible for any use of these measures.

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Statistics on Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease is a slowly progressive disease impacting the nation's health. In the United States, COPD is the 4th leading cause of death and is projected to be the third leading cause of death for both males and females by the year 2020.[5]

- An estimated 12.1 million adults ages 25 and older are reported to have the diagnosis of COPD.[6]
- Annually, 1.5 million emergency department visits are made for COPD and approximately 725,000 hospitalizations occur.[6]
- The total direct and indirect cost of COPD in 2002 was $32.1 billion ($18 billion direct costs and $14.1 billion in indirect costs).[6]

Statistics on Current Practice

Despite potential risks and established clinical guidelines, recent data suggest that some patients are not being managed optimally for this disease. It has been reported that:

- A 1996 study found that only 14.3% of ambulatory visits by those diagnosed with COPD included counseling on tobacco use.[7]

In one study, over 50% of individuals with COPD did not receive a pneumococcus immunization; 20% did not receive an influenza immunization.[8]

- Patient compliance with inhaled bronchodilator therapy by self-report at follow-up year 1 was just over 60%, declining to , 50% at year 5.[7]

Selected Evidence-Based Clinical Guidelines

Evidence-based clinical practice guidelines are available for the management of COPD. This measurement set is based on clinical recommendations from the following:

- American Thoracic Society and European Respiratory Society[9]
- National Heart, Lung and Blood Institute/World Health Organization[10]
- US Preventive Services Task Force[11]
- Centers for Disease Control and Prevention, The Advisory Committee on Immunization Practices[12]

The performance measures found in this document have been developed in agreement with these guidelines, enabling the physician to track his or her performance in individual patient care and across the patient population. *Please note that treatment must be based on individual patient needs and professional judgment.*

For more information and updates on this measurement set, please visit the Consortium's Web site at:

www.physicianconsortium.org

Relevant Physician Specialties, Patient Population, and Settings of Care

These performance measures are designed for:

- Use by any physician who manages patients with chronic obstructive pulmonary disease, aged 18 years and older
- Use in the office setting

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Physician Consortium for Performance Improvement®
Chronic Obstructive Pulmonary Disease (COPD) Performance Measurement Set

<table>
<tr><th></th><th>Clinical Recommendations
Treatment Goals</th><th colspan="2">Clinical Performance Measures Per Year</th></tr>
<tr><td rowspan="2">Spirometry
Denominator Exclusions:
Medical reason(s) for not documenting spirometry results; Patient reason(s) for not documenting spirometry results; System reason(s) for not documenting spirometry results.</td><td rowspan="2">Spirometry should be performed in all patients suspected of COPD. This is necessary for diagnosis, assessment of severity of the disease and for following the progress of the disease. (ATS and ERS) (Evidence not graded)
For the diagnosis and assessment of COPD, spirometry is the gold standard as it is the most reproducible, standardized, and objective way of measuring airflow limitation. (NHLBI/WHO) (Evidence not graded)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who had spirometry results documented
Numerator = All patients with spirometry results documented in the medical record
Denominator = All patients aged 18 years and older with a diagnosis of COPD</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD had spirometry results documented</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who had spirometry results documented</td></tr>
<tr><td rowspan="2">Assessment of Symptoms</td><td rowspan="2">Symptoms and objective measures of airflow should be monitored for development of complications and to determine when to adjust therapy. Follow-up visits should include a discussion of new or worsening symptoms. (NHLBI/WHO) (Evidence not graded)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who were assessed for COPD symptoms at least annually
Numerator = All patients with COPD symptoms assessed during one or more office visits each year
Denominator = All patients aged 18 years and older with a diagnosis of COPD</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD was assessed for COPD symptoms at least annually</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who were assessed for COPD symptoms at least annually</td></tr>
<tr><td rowspan="2">Smoking Assessment</td><td rowspan="2">Periodic screening for tobacco use is recommended for all patients.
(A Recommendation, Level I Evidence) (USPTF)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who were queried about smoking at least annually
Numerator = All patients who were queried about smoking during one or more office visits each year
Denominator = All patients aged 18 years and older with a diagnosis of COPD</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD was queried about smoking at least annually</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who were queried about smoking at least annually</td></tr>
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	Clinical Recommendations Treatment Goals	Clinical Performance Measures Per Year	
Smoking Cessation Intervention *Denominator Inclusion:* Documentation of smoking	Tobacco cessation counseling is recommended for all patients who smoke. (A Recommendation, Level I Evidence) (USPTF) Quitting smoking can slow the progressive loss of lung function and can reduce symptoms at any point in time. (ATS and ERS) (Evidence not graded)	Percentage of patients aged 18 years and older with a diagnosis of COPD identified as smokers who received a smoking cessation intervention at least annually **Numerator** = All patients identified as smokers who received a smoking cessation intervention during one or more office visits each year **Denominator** = All patients aged 18 years and older with a diagnosis of COPD identified as smokers	
		Per Patient: Whether or not the patient aged 18 years and older with a diagnosis of COPD identified as a smoker received a smoking cessation intervention at least annually	*Per Patient Population:* Percentage of patients aged 18 years and older with a diagnosis of COPD identified as smokers who received a smoking cessation intervention at least annually
Inhaled Bronchodilator Therapy *Denominator Inclusion:* Documentation of COPD symptoms; documentation of $FEV_1/FVC < 70\%$ *Denominator Exclusions:* Documentation of medical reason(s) for not prescribing an inhaled bronchodilator; documentation of patient reason(s) for not prescribing an inhaled bronchodilator; documentation of system reason(s) for not prescribing an inhaled bronchodilator.	Bronchodilator medications are central to the symptomatic management of COPD. (Evidence A) (NHLBI/ WHO)	Percentage of patients aged 18 years and older with a diagnosis of COPD and who have an $FEV_1/FVC < 70\%$ and have symptoms who were prescribed an inhaled bronchodilator **Numerator** = All patients who were prescribed an inhaled bronchodilator **Denominator** = All patients aged 18 years and older with a diagnosis of COPD who have an $FEV_1/FVC < 70\%$ and have symptoms	
		Per Patient: Whether or not the patient aged 18 years and older with a diagnosis of COPD and who has an $FEV_1/FVC < 70\%$ and has symptoms was prescribed an inhaled bronchodilator	*Per Patient Population:* Percentage of patients aged 18 years and older with a diagnosis of COPD and who have an $FEV_1/FVC < 70\%$ and have symptoms who were prescribed an inhaled bronchodilator
Assessment of Oxygen Saturation *Denominator Inclusion:* Documentation of $FEV_1 <$ 40% of predicted value. *Denominator Exclusions:* Documentation of medical reason(s) for not assessing oxygen saturation; documentation of patient reason(s) for not assessing oxygen saturation; documentation of system reason(s) for not assessing oxygen saturation.	ABG is recommended for initiation of oxygen therapy as well as to determine arterial carbon dioxide tension ($PaCO_2$) and acid-base status. (ATS and ERS) (Evidence not graded) In advanced COPD, measurement of arterial blood gases in important. This test should be performed with $FEV_1 < 40\%$ predicted or with clinical signs suggestive of respiratory failure or right heart failure. (Evidence A) (NHLBI/WHO)	Percentage of patients aged 18 years and older with a diagnosis of COPD who have oxygen saturation assessed at least annually **Numerator** = All patients who have oxygen saturation assessed during one or more office visits each year **Denominator** = All patients aged 18 years and older with a diagnosis of COPD and an $FEV_1 < 40\%$ of predicted value	
		Per Patient: Whether or not the patient aged 18 years and older with a diagnosis of COPD has oxygen saturation assessed at least annually	*Per Patient Population:* Percentage of patients aged 18 years and older with a diagnosis of COPD who have oxygen saturation assessed at least annually

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<table>
<tr><th></th><th>Clinical Recommendations
Treatment Goals</th><th colspan="2">Clinical Performance Measures Per Year</th></tr>
<tr><td rowspan="2">Long Term Oxygen Therapy
Denominator Inclusion:
$PaO_2 \leq 55$ mm Hg or oxygen saturation $\leq 88\%$
Denominator Exclusions:
Documentation of medical reason(s) for not prescribing long term oxygen therapy; documentation of patient reason(s) for not prescribing long term oxygen therapy; documentation of system reason(s) for not prescribing long term oxygen therapy.</td><td rowspan="2">Patients whose disease is stable on a full medical regimen, with $PaO_2 < 55$ mm Hg [7.3 k Pa] (corresponding to an ($SaO_2 < 88\%$), should receive long term oxygen therapy (LTOT). (ATS and ERS) (Evidence not graded)

Long-term administration of oxygen (>15 hours per day) to patients with chronic respiratory failure has been shown to increase survival. (Evidence A) (NHLBI/WHO)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD and an oxygen saturation $\leq 88\%$ or a $PaO_2 \leq 55$ mm Hg who were prescribed long term oxygen therapy
Numerator = All patients who were prescribed long term oxygen therapy
Denominator = All patients aged 18 years and older with a diagnosis of COPD and an oxygen saturation $\leq 88\%$ or a $PaO_2 \leq 55$ mm Hg</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD and an oxygen saturation $\leq 88\%$ or a $PaO_2 \leq 55$ mm Hg was prescribed long term oxygen therapy</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD and an oxygen saturation $\leq 88\%$ or a $PaO_2 \leq 55$ mm Hg who were prescribed long term oxygen therapy</td></tr>
<tr><td rowspan="2">Pulmonary Rehabilitation: Exercise Training Recommended
Denominator Inclusion:
Documentation of dyspnea
Denominator Exclusion:
Documentation of medical reason(s) for not recommending exercise training; documentation of system reason(s) for not recommending exercise training.</td><td rowspan="2">Pulmonary rehabilitation should be considered for patients with COPD who have dyspnea or other respiratory symptoms, reduced exercise tolerance, a restriction in activities because of their disease, or impaired health status. (ATS and ERS) (Evidence not graded)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD for whom exercise training was recommended
Numerator = All patients for whom exercise training was recommended
Denominator = All patients aged 18 years and older with the diagnosis of COPD and dyspnea</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD for whom exercise training was recommended</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD for whom exercise training was recommended</td></tr>
<tr><td rowspan="2">Recommendation of Influenza Immunization
Denominator Exclusions:
Documentation of immunization given during current flu season; documentation of medical reason(s) for not recommending an influenza immunization; documentation of system reason(s) for not recommending an influenza immunization.</td><td rowspan="2">Influenza vaccines can reduce serious illness and death in COPD patients by about 50 percent. (Evidence A) (NHLBI/WHO)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who were recommended to receive an influenza immunization annually
Numerator = All patients who were recommended to receive an influenza immunization during one or more office visits each year
Denominator = All patients aged 18 years and older with a diagnosis of COPD</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD was recommended to receive an influenza immunization annually</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who were recommended to receive an influenza immunization annually</td></tr>
</table>

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<table>
<tr><th></th><th>Clinical Recommendations
Treatment Goals</th><th colspan="2">Clinical Performance Measures Per Year</th></tr>
<tr><td rowspan="2">Influenza Immunization Administered
Denominator Inclusion:
Documentation of visit during flu season
Denominator Exclusions:
Documentation that patient is planning to receive influenza immunization during current flu season; documentation of medical reason(s) for not administering the influenza immunization; documentation of patient reasons(s) for not administering the influenza immunization; documentation of system reason(s) for not administering the influenza immunization.</td><td rowspan="2">Influenza vaccines can reduce serious illness and death in COPD patients by about 50 percent. (Evidence A) (NHLBI/WHO)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who received an influenza immunization during the current flu season
Numerator = All patients who are administered an influenza immunization during the visit or who have already received an influenza immunization during the current flu season
Denominator = All patients aged 18 years and older with a diagnosis of COPD seen during flu season</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD received an influenza immunization during the current flu season</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who received an influenza immunization during the current flu season</td></tr>
<tr><td rowspan="2">Assessment of Pneumococcus Immunization Status
Denominator Exclusion:
Documentation that pneumococcus immunization was not indicated.</td><td rowspan="2">All patients with chronic diseases of the pulmonary system should be vaccinated. (Advisory Committee on Immunization Practices, CDC)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who were assessed for pneumococcus immunization status
Numerator = All patients who were assessed for pneumococcus immunization status
Denominator = All patients aged 18 years and older with a diagnosis of COPD</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD was assessed for pneumococcus immunization status</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who were assessed for pneumococcus immunization status</td></tr>
<tr><td rowspan="2">Pneumococcus Immunization Administered
Denominator Exclusions:
Pneumococcus immunization recommended but not administered; documentation of medical reason(s) for not administering the pneumococcus immunization; documentation of patient reason(s) for notadministering the pneumococcus immunization; documentation of system reason(s) for not administering the pneumococcus immunization.</td><td rowspan="2">All patients with chronic diseases of the pulmonary system should be vaccinated. (Advisory Committee on Immunization Practices, CDC)</td><td colspan="2">Percentage of patients aged 18 years and older with a diagnosis of COPD who received a pneumococcus immunization
Numerator = All patients who are administered a pneumococcus immunization during a visit or who have already received a pneumococcus immunization
Denominator = All patients aged 18 years and older with a diagnosis of COPD</td></tr>
<tr><td>Per Patient:
Whether or not the patient aged 18 years and older with a diagnosis of COPD received a pneumococcus immunization</td><td>Per Patient Population:
Percentage of patients aged 18 years and older with a diagnosis of COPD who received a pneumococcus immunization</td></tr>
</table>

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Physician Consortium for Performance Improvement®
Chronic Obstructive Pulmonary Disease Core Physician Performance Measurement Set
Data Collection Flowsheet

Provider No. ______________ **Patient Name or Code** ______________________________**Birth Date** _____ / _____ / _____ **Gender M** ___ **F**___

Allergies

Monitoring			
Initial Spirometry	Date ___/___/_____ FEV_1 ________ FEV_1/FVC_______		Not performed: Medical reason* _______ Patient reason* _______ System reason* _______
Date of Visit (mm/dd/yyyy)	___/___/_____	___/___/_____	___/___/_____
Symptom Assessment Worse (W), same (S) or improved (I)	Dyspnea_____ Cough/Sputum_____ Wheezing____ ☐ Standardized assessment tool used[a]	Dyspnea_____ Cough/Sputum_____ Wheezing____ W or S or I ☐ Standardized assessment tool used[a]	Dyspnea_____ Cough/Sputum_____ Wheezing____ W or S or I ☐ Standardized assessment tool used[a]
Repeat Spirometry (If appropriate)	FEV_1 ________ FEV_1/FVC_______	FEV_1 ________ FEV_1/FVC_______	FEV_1 ________ FEV_1/FVC_______
Smoking and Intervention	Current Smoker **Y N** Counseling **Y N** Pharmacologic **Y N**	Current Smoker **Y N** Counseling **Y N** Pharmacologic **Y N**	Current Smoker **Y N** Counseling **Y N** Pharmacologic **Y N**
Oxygen Saturation (If indicated)	Oximetry_______ ABG __________ Not performed: Medical reason*____ Patient reason*_____ System reason*_____	Oximetry_______ ABG __________ Not performed: Medical reason*____ Patient reason*_____ System reason*_____	Oximetry_______ ABG __________ Not performed: Medical reason*____ Patient reason*_____ System reason*_____
Inhaled Bronchodilators (B_2–agonists and/or anticholinergics)	B_2–agonist_________________ Anticholinergic_______________ Not prescribed: Medical reason*____ Patient reason*_____ System reason*_____	No change____ B_2–agonist_________________ Anticholinergic_______________ Not prescribed: Medical reason*____ Patient reason*_____ System reason*_____	No change____ B_2–agonist_________________ Anticholinergic_______________ Not prescribed: Medical reason*____ Patient reason*_____ System reason*_____
Long Term Oxygen Therapy (If indicated)	__________liters Not prescribed: Medical reason*____ Patient reason*_____ System reason*_____	__________liters Not prescribed: Medical reason*____ Patient reason*_____ System reason*_____	__________liters Not prescribed: Medical reason*____ Patient reason*_____ System reason*_____
Pulmonary Rehabilitation: Exercise Training	Recommended **Y N** Not recommended: Medical reason*___ System reason*____	Recommended **Y N** Not recommended: Medical reason*__ System reason*__	Recommended **Y N** Not recommended: Medical reason*__ System reason*__
Influenza Immunization Immunization Allergy_______	Recommended **Y N** Not recommended: Med. reason*___ System reason*___ Current Season: Already rec'd_____ Given__________ Not given: Planned ____________ Medical reason*________ Patient reason*_________ System reason*_____ __	Recommended **Y N** Not recommended: Med. reason*___ Current Season: Already rec'd_____ Given__________ Not given: Planned ____________ Medical reason*________ Patient reason*_________ System reason*_____ __	Recommended **Y N** Not recommended: Med. reason*___ Current Season: Already rec'd_____ Given__________ Not given: Planned ____________ Medical reason*________ Patient reason*_________ System reason*_____ __
Pneumococcus Immunization Immunization Allergy_______	Assessed **Y N** Not indicated_________________	Immunization already received _____ Immunization given ___/___/______	Not given: Recommended________ Medical reason*________ Patient reason*________ System reason*________

*** Specify medical, patient or system reasons for not performing assessment or prescribing therapy:**

[a] Several standardized respiratory symptom assessment tools/questionnaires are available, such as: Chronic Respiratory Disease Questionnaire; University of California San Diego-Shortness of Breath Questionnaire; St. George's Respiratory Questionnaire.

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