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| <b>Body System:</b> Respiratory   |  |  |
| <b>Session Topic:</b> Chronic Obstructive Pulmonary Disorder (COPD)   |  |  |
| <b>Educational Format</b>   |  | <b>Faculty Expertise Required</b>  |
| <b>REQUIRED</b>   | Interactive Lecture  | Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.  |
| <b>OPTIONAL</b>   | Problem-Based Learning (PBL)   | Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u> |
| <b>Professional Practice Gap</b>  | <b>Learning Objective(s) that will close the gap and meet the need</b>   | <b>Outcome Being Measured</b>  |
| <ul style="list-style-type: none"> <li>Because the most common cause of COPD is cigarette smoke, patients who are current or former smokers should be evaluated for possible development of COPD or related conditions (such as emphysema). Patients who develop frequent respiratory infections – particularly acute bronchitis, influenza and pneumonia – should also be evaluated for chronic respiratory symptoms</li> <li>In cases in which patients are diagnosed with COPD (*requires spirometric confirmation), family physicians should undertake a combination approach to therapies, including medications, vaccinations, pulmonary rehabilitation, oxygen therapy and smoking cessation (if applicable).</li> </ul> | <ol style="list-style-type: none"> <li>Evaluate patients who are current or former smokers, and those who develop frequent viral infections, for symptoms that may indicate COPD or related conditions.</li> <li>Interpret and validate results in symptomatic patients.</li> <li>Prepare treatment plans that include a combination approach to therapy for patients who have COPD.</li> <li>Counsel patients who have COPD on the importance of quitting smoking and receiving annual vaccinations for influenza and pneumonia.</li> </ol> | Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.  |



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| <ul style="list-style-type: none"> <li>• Family physicians should evaluate patients with COPD for possibilities of other comorbid conditions such as heart disease, depression, osteoporosis which can complicate therapy and require extra guidance or counseling. Family physicians should assure access to annual influenza and pneumonia vaccinations.</li> <li>• Family physicians should assure that COPD diagnoses are confirmed by spirometric evaluation and periodic reassessment is desirable and useful in guiding therapy.</li> <li>• New (Apr 2017) ERS/ATS guidelines for the management of COPD exacerbations.</li> <li>• New (Mar 2017) updated GOLD guidelines for COPD</li> </ul> |  |  |
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**ACGME Core Competencies Addressed (select all that apply)**

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|---|--|--|---|
| X | Medical Knowledge                      |  | Patient Care                            |
| X | Interpersonal and Communication Skills |  | Practice-Based Learning and Improvement |
|   | Professionalism                        |  | Systems-Based Practice                  |

**Faculty Instructional Goals**

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start



- Visit <http://www.aafp.org/journals> for additional resources
- Visit <http://familydoctor.org> for patient education and resources
- Provide tools, resources, and strategies to foster the implementation of evidence-based COPD management guidelines into practice
- Provide specific strategies and resources to counsel patients who have COPD on the importance of quitting smoking, receiving annual vaccinations for influenza and pneumonia, and evidence-based recommendations for efficacious COPD risk reduction strategies.
- Provide recommendations to assist those physicians who would like to start using spirometry in their practice (i.e. purchasing equipment, staff training, maintenance)
- Provide an overview of new COPD drugs, including evidence-based recommendations for their use.
- Provide recommendations regarding guidelines for Medicare reimbursement.
- Provide recommendations to maximize office efficiency and guideline adherence to the diagnosis and management of COPD.

### Needs Assessment

Chronic obstructive pulmonary disease (COPD) is a major cause of disability and became the third leading cause of death in the United States in 2008.<sup>1</sup> The most common cause of COPD is cigarette smoke, and in 2014, an estimated 16.8% of U.S. adults were current cigarette smokers.<sup>2</sup> More than 12 million people are currently diagnosed with COPD, but many more likely have the disease and don't even know it. Although death rates for COPD have declined among US men between 1999 (57.0 per 100,000) and 2010 (47.6 per 100,000) in the United States, there has been no significant change among death rates in women (35.3 per 100,000 in 1999 and 36.4 per 100,000 in 2010).<sup>3</sup>

Data from a recent American Academy of Family Physicians (AAFP) CME Needs Assessment survey indicate that family physicians have a knowledge gap with regard to diagnosing, treating and managing COPD.<sup>4</sup> Additionally, CME outcomes data from 2011-2016 AAFP FMX (formerly Assembly) sessions on the topic of COPD, indicate that physicians have knowledge and practice gaps related to pulmonary function tests specifically, particularly in terms of interpretation of test results; identifying strategies to consistently implement COPD practice guidelines for spirometry testing, treatment, and smoking cessation; identifying those at risk for COPD; and remaining up to date on new treatments.<sup>5-9</sup> Spirometry, the primary method of pulmonary function testing, should be used to confirm, monitor and manage patients who have COPD and other lung disorders. Technological advancements have made spirometry more reliable and easier to incorporate into a routine office visit.<sup>10</sup>

AAFP Practice Profile data indicates that 66% of family physicians conduct spirometry tests in practice. However, of those who do not, 47% say that it is “not desired” and 23% say they lack the necessary training.<sup>11</sup> Continued education may allow some family physicians to find value in incorporating spirometry into their practice and best meeting the needs of their patients. Family physicians are encouraged to follow evidence-based guidelines in their use of spirometry, as both the AAFP and the USPSTF recommends against the use of spirometry to screen asymptomatic adults for COPD; however, a diagnosis of COPD should be considered in patients with



unexplained respiratory symptoms, progressive dyspnea, chronic cough, increased sputum production with risk factors (e.g., smoking).<sup>12-15</sup>

The American Medical Association's Physician Consortium for Performance Improvement has published performance quality measures for COPD, yet adherence to COPD guidelines remains suboptimal.<sup>16</sup> Family physicians require additional education and practical strategies to implement COPD quality improvement measures into practice to ensure adherence to treatment guidelines.<sup>17</sup>

Physicians who routinely adhere to evidence-based guidelines for the management of patients with COPD should minimize the likelihood of an exacerbation. However, exacerbations of COPD contribute to the high mortality rate of the disease; therefore, family physicians need to be aware of evidence-based practice recommendations to provide effective management.<sup>18</sup>

Patients who have COPD – which most often develops after the age of 40 – tend to suffer from frequent prolonged colds (i.e. acute bronchitis), influenza and pneumonia, which also may be an indication of COPD and COPD exacerbations not yet identified. Since there is no cure for COPD, numerous treatment options are usually recommended for patients to manage the disease and control symptoms. Smoking cessation may slow its progression.<sup>19</sup>

Although smoking cessation is the first step in treating COPD, a combination approach to therapies is required.<sup>20</sup> While physicians should continue to focus on smoking cessation in the prevention of COPD, some studies also suggest that improved nutrition may play a role in lowering the risk of COPD in both men and women.<sup>21,22</sup>

Physicians may improve their care of patients with COPD by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:<sup>14,15,20,23-25</sup>

- Screening for COPD in asymptomatic patients who are at increased risk is not recommended.
- The diagnosis of COPD should be confirmed by a postbronchodilator FEV1/FVC ratio less than 0.7.
- Smoking cessation is recommended to reduce the rate of FEV1 decline and mortality in patients with COPD.
- No combination of inhaled medications has been found superior to monotherapy for initial treatment of COPD; patients should step up to combination therapy as needed.
- Monotherapy with a long-acting beta2 agonist or long-acting anticholinergic is recommended for symptomatic patients with COPD whose FEV1 is less than 60% of predicted.
- Initial monotherapy with a long-acting beta2 agonist or long-acting anticholinergic is recommended for patients with COPD. An inhaled corticosteroid may be added as symptom severity or airflow obstruction progresses.
- Long-term oxygen therapy is recommended for patients with COPD who have severe resting hypoxia (arterial partial pressure of oxygen 55 mm Hg or less, or oxygen saturation 88% or less).



- Pulmonary rehabilitation is recommended for symptomatic patients with COPD whose FEV1 is less than 50% of predicted.
- Suspected COPD should be confirmed by spirometry with a postbronchodilator forced expiratory volume in one second/forced vital capacity ratio of less than 0.70.
- Physicians should use the Global Initiative for Chronic Obstructive Lung Disease criteria of FEV1/FVC ratio less than the lower limit of normal to diagnose obstructive lung disease in younger and older patients to lower the risk of false positives and false negatives that can occur when using only the .7 ratio in age extremes who are otherwise suspected of having COPD.
- If an obstructive defect is present, the physician should determine if it is reversible based on the increase in FEV1 or FVC after bronchodilator treatment (i.e., increase of more than 12% in patients five to 18 years of age, or more than 12% and more than 200 mL in adults). Patients with COPD may have reversibility but are very unlikely to return to an FEV1 of 80% of predicted or greater \*normal (
- If pulmonary function test results are normal but the physician still suspects COPD or exercise- or allergen-induced asthma, referral to a pulmonologist for further evaluation such as a bronchoprovocation (e.g., methacholine challenge, mannitol inhalation challenge, exercise testing) should be considered. .
- Smoking cessation is recommended for all patients with COPD who smoke.
- Patients in GOLD group A should be treated with a short-acting anticholinergic or short-acting beta2 agonist on an as-needed basis .
- Patients in GOLD group B should be treated with a long-acting anticholinergic or long-acting beta2 agonist or a both in combination.
- Patients in GOLD group C or D, meaning they are increased risk of COPD exacerbations, should be treated with a long-acting anticholinergic, a long acting beta2 agonist or both or a combination of an inhaled corticosteroid and long-acting beta2 agonist or inhaled corticosteroid and long-acting anticholinergic or all three in triple therapy.
- Long-term oxygen therapy improves morbidity and may improve mortality rates in patients with severe hypoxemia and COPD .
- Continuous prophylactic antibiotic therapy significantly decreases COPD exacerbations for up to three years. However, it does not decrease mortality, and it puts the patient at risk of antibiotic-resistant colonization and infection. This therapy may best be initiated in consultation with a pulmonologist. (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)
- Patients with COPD and chronic bronchitis and increased risk of exacerbations may benefit for the addition of roflumilast to dual bronchodilator therapy or even triple therapy .
- Patients with COPD who are treated with breathing exercises vs. standard care showed an improvement in exercise capacity, with inconsistent changes in dyspnea and health-related quality of life. Adding breathing exercises to a pulmonary rehabilitation program did not show any increased benefit. Breathing exercises may be helpful for those without access to a pulmonary rehabilitation program. (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)



In order to curb health-care costs and improve patient care, physicians should consider the following *Choosing Wisely* recommendation from the American Thoracic Society (ATS) and the American College of Chest Physicians (ACCP):<sup>26</sup>

- Do not perform frequent spirometry in patients with COPD in patients who are clinically stable and have an established diagnosis.
- Do not routinely administer IV steroids; use oral steroids for patients hospitalized for acute exacerbations of asthma and COPD.

Additionally, physicians should be kept up to date on new and updated COPD guidelines. For example:

- The European Respiratory Society and American Thoracic Society (ERS/ATS) have published joint guidelines that address several issues in the management of chronic obstructive pulmonary disease (COPD) exacerbations.<sup>27</sup>
- The Global Initiative for Chronic Obstructive Lung Disease (GOLD) has published updated guidelines that focus on a combined assessment of an individual's symptoms and exacerbation history to guide therapy.<sup>28</sup>

These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

Physicians should also be kept up to date on new treatment therapies, changes to therapies, or warnings associated with existing therapies. Physicians with diabetic patients who also have COPD should be aware that the US Food and Drug Administration (FDA) approved a formulation of inhaled insulin (Afrezza) in June 2014; however, the medication is contraindicated in patients with chronic lung disease, such as asthma or COPD.<sup>29</sup> Utibron Neohaler (indacaterol & glycopyrrolate) in October 2015, a long term, maintenance treatment of airflow obstruction.<sup>30</sup> Striverdi Respimat (olodaterol), a long-acting beta2-adrenergic agonist inhalation spray was approved in July 2014. Additionally, Indacaterol (Arcapta) provides a similar benefit to other long-acting bronchodilators for the treatment of moderate to severe COPD, with once-daily dosing. As with other LABAs, it should be used only as add-on therapy in patients already taking inhaled corticosteroids.<sup>31</sup> Roflumilast therapy has a limited role in patients with severe COPD, and no role in patients with mild to moderate COPD. It will not decrease the number of hospitalizations. It will slightly lower the number of exacerbations requiring oral corticosteroid treatment, but only in select patients (i.e., those with a combination of severe COPD, current bronchitic symptoms, and a previous exacerbation). Roflumilast has not been shown to affect mortality, daily symptoms, or quality of life, and it has not been studied in optimally treated patients. Its use is further limited by psychiatric effects, weight loss, and gastrointestinal symptoms.<sup>32</sup>



Additionally, umeclidinium inhalation powder (Incruse Ellipta) is a long-acting anticholinergic medication labeled for maintenance treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD), including emphysema and chronic bronchitis.<sup>33</sup> Umeclidinium is an easy-to-use, once-daily, well-tolerated, and relatively low-cost anticholinergic agent for maintenance therapy in patients with moderate to severe COPD.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- Chronic Obstructive Pulmonary Disease: Diagnosis and Management<sup>25</sup>
- 2017 Updated GOLD guidelines<sup>28</sup>
- 2017 ERS/ATS guidelines for the management of COPD exacerbations<sup>27</sup>
- Treatment of stable chronic obstructive pulmonary disease: the GOLD guidelines<sup>14</sup>
- Global Initiative for Chronic Obstructive Lung Disease (GOLD)<sup>20</sup>
- ACP updates guideline on diagnosis and management of stable COPD<sup>34</sup>
- AARC clinical practice guideline: effectiveness of non-pharmacologic airway clearance therapies in hospitalized patients<sup>35</sup>
- AAFP Clinical Preventive Services Recommendations: Chronic Obstructive Pulmonary Disease<sup>36</sup>
- AMA PCPI Chronic Obstructive Pulmonary Disease (COPD) Performance Measurement Set<sup>17</sup>
- A stepwise approach to the interpretation of pulmonary function tests<sup>15</sup>
- Management of COPD Exacerbations<sup>18</sup>
- Outdoor Air Pollutants and Patient Health<sup>37</sup>
- FamilyDoctor.org. Chronic Obstructive Pulmonary Disease | Overview (patient resource)<sup>38</sup>

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