

Eligible Population: Adults ≥ 18 years of age with diagnosis of COPD																								
Key Component	Recommendation			Frequency																				
Risk Assessment and Diagnosis	<ul style="list-style-type: none"> Diagnosis is based on exposure to risk factors and presence of airflow limitation that is not fully reversible, with or without symptoms Key indicators for considering a diagnosis of COPD: <ul style="list-style-type: none"> Chronic cough-present intermittently or every other day; seldom only nocturnal Dyspnea that is progressive, present every day, and worsens with activity and/or respiratory infections History of exposure to risk factors: tobacco smoke*, occupational dusts and chemicals, smoke from home cooking, heating fuels, air pollution, chronic respiratory infections, or family history of severe COPD Rule out asthma, heart failure, cystic fibrosis, bronchiectasis, and other lung diseases 			Assess adults for risk factors at routine preventive visits <i>Advise smokers to quit at every visit</i> Refer patients to MI Tobacco Quitline 1-800-480-7848																				
Diagnostic Testing	<ul style="list-style-type: none"> Spirometry is necessary to confirm the diagnosis of COPD and determine degree of airflow limitation Bronchodilator Reversibility Testing (to rule out asthma) CXR ABG if FEV₁ <50% or clinical signs of respiratory failure or right heart failure (cyanosis, positive JVD, ankle edema) Consider Alpha-1 Antitrypsin Deficiency Screening when Caucasian descent under age 45 or with a strong family history 			To establish diagnosis; then as needed if an increase in symptoms or complications																				
FVC = forced vital capacity; FEV ₁ = forced expiratory volume in one second	Classification of COPD by severity: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:25%;">Stage I: Mild</th> <th style="width:25%;">Stage II: Moderate</th> <th style="width:25%;">Stage III: Severe</th> <th style="width:25%;">Stage IV: Very Severe</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> FEV₁/FVC <70%, FEV₁ ≥80% Sometimes, but not always, cough and sputum production May not be aware of diagnosis </td> <td> <ul style="list-style-type: none"> FEV₁/FVC <70%; 50% ≤ FEV₁ <80% Typically short of breath during exertion </td> <td> <ul style="list-style-type: none"> FEV₁/FVC <70%; 30% ≤ FEV₁ <50% Increased shortness of breath with any exertion or at rest Wheeze and cough often prominent </td> <td> <ul style="list-style-type: none"> FEV₁/FVC <70%; FEV₁/FVC <30% or FEV₁ <50% plus chronic respiratory failure (O₂ <60 or CO₂ >50) </td> </tr> </tbody> </table>				Stage I: Mild	Stage II: Moderate	Stage III: Severe	Stage IV: Very Severe	<ul style="list-style-type: none"> FEV₁/FVC <70%, FEV₁ ≥80% Sometimes, but not always, cough and sputum production May not be aware of diagnosis 	<ul style="list-style-type: none"> FEV₁/FVC <70%; 50% ≤ FEV₁ <80% Typically short of breath during exertion 	<ul style="list-style-type: none"> FEV₁/FVC <70%; 30% ≤ FEV₁ <50% Increased shortness of breath with any exertion or at rest Wheeze and cough often prominent 	<ul style="list-style-type: none"> FEV₁/FVC <70%; FEV₁/FVC <30% or FEV₁ <50% plus chronic respiratory failure (O₂ <60 or CO₂ >50) 												
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Therapy at Each Stage of COPD	<ul style="list-style-type: none"> Use a stepwise increase in therapy, depending on the severity of the disease; pharmacotherapy decreases symptoms and/or complications Bronchodilators are central to symptomatic management of COPD. Inhaled glucocorticosteroids are appropriate for severe/very severe patients. Avoid chronic treatment with systemic glucocorticosteroids. Regular treatment with long-acting bronchodilators is more effective and convenient than with short-acting bronchodilators, but more costly. Obtaining the opinion of a pulmonary specialist may be beneficial at any stage of the disease. <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:25%;">Stage I: Mild</th> <th style="width:25%;">Stage II: Moderate</th> <th style="width:25%;">Stage III: Severe</th> <th style="width:25%;">Stage IV: Very Severe</th> </tr> </thead> <tbody> <tr> <td colspan="4">Active reduction of risk factor(s); such as smoking, influenza and pneumococcal vaccination, pulmonary rehabilitation/regular exercise to improve exercise tolerance, reduce symptoms, and improve quality of life; patient education to address disease, treatment, compliance, advance directives, etc.</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">Add short-acting bronchodilator as needed for symptoms. Add regular treatment with one or more long-acting bronchodilators (single or combination of beta-agonists and anticholinergics).</td> </tr> <tr> <td colspan="3"></td> <td>Add inhaled glucocorticosteroids if repeated exacerbations</td> </tr> <tr> <td colspan="4">Add long term oxygen supplementation to increase baseline PaO₂ in those with chronic respiratory failure; consider surgical treatments</td> </tr> </tbody> </table>			Stage I: Mild	Stage II: Moderate	Stage III: Severe	Stage IV: Very Severe	Active reduction of risk factor(s); such as smoking, influenza and pneumococcal vaccination, pulmonary rehabilitation/regular exercise to improve exercise tolerance, reduce symptoms, and improve quality of life; patient education to address disease, treatment, compliance, advance directives, etc.						Add short-acting bronchodilator as needed for symptoms. Add regular treatment with one or more long-acting bronchodilators (single or combination of beta-agonists and anticholinergics).					Add inhaled glucocorticosteroids if repeated exacerbations	Add long term oxygen supplementation to increase baseline PaO ₂ in those with chronic respiratory failure; consider surgical treatments				
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Home Treatment of Exacerbation	<ul style="list-style-type: none"> Bronchodilators increase dose/frequency; if not in use, add anticholinergic until symptoms improve Glucocorticosteroids – if baseline FEV₁ <50% add 30-40mg prednisolone per day for 7-10 days Antibiotics should be given <ul style="list-style-type: none"> With 3 cardinal symptoms: increased dyspnea, sputum volume, increased sputum purulence Sputum purulence + increased dyspnea or sputum volume 			Follow-up visit after an acute inpatient discharge, ED visit, or home exacerbation																				

*Worldwide cigarette smoking is the most common risk factor, but up to 10% have never smoked

Sources: Institute for Clinical Systems Improvement (ICSI) Health Care Guideline, *Diagnosis and Management of Chronic Obstructive Pulmonary Disease (COPD)*, Seventh Edition, January 2009
 Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease, Executive Summary, Updated 2009
 Global Initiative for Chronic Obstructive Pulmonary Disease, *Pocket Guide to COPD Diagnosis, Management, and Prevention, A Guide for Health Care Professionals*, Updated 2010.

This guideline lists core management steps. Individual patient considerations and advance in medical science may supersede or modify the recommendations.