

CARE GUIDE for COPD

SUGGESTED GUIDELINES	PROCESS	IMPORTANT FINDINGS, MEASUREMENT & VALUE	INTERVENTIONS	FOLLOW-UP
<p>Screen All Current and Ex-Smokers for COPD (1-3, 4, 12)</p>	<ul style="list-style-type: none"> Perform focused H & P 	<ul style="list-style-type: none"> History of <ul style="list-style-type: none"> ➤ Chronic cough (> 3 months) ➤ Dyspnea ➤ Chronic sputum production Physical exam can be normal in early COPD 	<ul style="list-style-type: none"> Advise patients about risk factor reduction /elimination Proceed with workup for differential diagnosis. <i>Consider</i> asthma first. Confirm COPD diagnosis 	<ul style="list-style-type: none"> If positive screen, return for Pulmonary Function Testing (PFTs) Consider screening Caucasians for alpha-1 antitrypsin deficiency if COPD developed younger than 45 years of age or has a family history of the deficiency
<p>Confirm Diagnosis of COPD with Spirometry (1-3)</p>	<ul style="list-style-type: none"> Order a post bronchodilator spirometry (nebulizer or metered dose inhaler) Differentiate asthma (reversible airway obstruction) from COPD (fixed airway obstruction) (<i>see table 1</i>) 	<ul style="list-style-type: none"> Post bronchodilator $FEV_1 < 80\%$ predicted together with $FEV_1/FVC < 0.70$ confirms the presence of airflow limitation that is not fully reversible. 	<ul style="list-style-type: none"> Encourage participation in Disease Management program Begin patient education A chest x-ray is recommended to rule out other etiologies CT not recommended for routine evaluation of COPD 	<ul style="list-style-type: none"> If positive diagnosis of COPD, return visit for severity staging and comprehensive risk assessment including co-morbidities

Stage COPD ⁽¹⁻³⁾	<ul style="list-style-type: none"> Post bronchodilator spirometry 	<p>GOLD Classification</p> <p>Stage I (mild COPD)</p> <ul style="list-style-type: none"> FEV₁/FVC < 70% FEV₁ ≥ 80% predicted With or without chronic symptoms <p>Stage II (moderate COPD)</p> <ul style="list-style-type: none"> FEV₁/FVC < 70% 50% < FEV₁ < 80% predicted <p>Stage III (severe COPD)</p> <ul style="list-style-type: none"> FEV₁/FVC < 70% 30% < FEV₁ < 50% predicted <p>Stage IV (very severe COPD)</p> <ul style="list-style-type: none"> FEV₁/FVC < 70% FEV₁ < 30% predicted or FEV₁ < 50% predicted plus presence of chronic respiratory failure 	<ul style="list-style-type: none"> Treatment recommendations according to GOLD classification (<i>see table 2</i>) Consider referring patients to a pulmonary specialist regarding diagnosis or management of COPD, especially in stage III or IV 	<ul style="list-style-type: none"> Repeat spirometry testing if significant changes in symptoms Patients with Stage I-II (mild to moderate): COPD schedule for follow-up at least annually Patients with severe disease (Stage III-IV): schedule for follow-up at least twice per year
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Assess Degree of Dyspnea ^(1,3-5)	<ul style="list-style-type: none"> Use a standardized questionnaire such as the Medical Research Council (MRC) 	<ul style="list-style-type: none"> MRC is a validated questionnaire correlated with health status and utilization 	<ul style="list-style-type: none"> Adjust treatment with short and long-acting bronchodilators and inhaled corticosteroids, as 	<ul style="list-style-type: none"> As indicated above

	questionnaire (see table 3)		needed • Supplemental O ₂ for symptom relief	
Tobacco ^(1-3, 6-8)	<ul style="list-style-type: none"> Document smoking status at each encounter 	<ul style="list-style-type: none"> History of prior attempts to quit Readiness assessment Tobacco use patterns Exposure to second-hand smoke 	<p>Think 5 A's</p> <ul style="list-style-type: none"> Ask about smoking Advise user to quit Assess willingness to quit Assist user to quit (ie: refer to smoking cessation program and consider pharmacotherapy) Arrange follow-up Strongly consider use of pharmacologic adjuvants; they can double or triple smoking cessation rates <p>NOTE:</p> <ul style="list-style-type: none"> ➤ Recommended pharmacotherapies for smoking cessation include bupropion SR and over-the-counter or prescription nicotine replacement therapy ➤ Varenicline is a newer agent that has also been shown to be highly effective 	<ul style="list-style-type: none"> Call on quit date or within 72 hours to boost self-efficacy (can delegate to DM program or SC program) Assess each visit: smoking status, weight gain, nicotine withdrawal symptoms

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<p>Screen for Depression (1-3, 9)</p>	<ul style="list-style-type: none"> Use a valid screening tool such as the PHQ-9 	<ul style="list-style-type: none"> PHQ-9 can be used to screen for depression and as a depression severity assessment tool 	<ul style="list-style-type: none"> Educate household contacts about detrimental effects of passive smoking <ul style="list-style-type: none"> Ask the first two questions from the validated PHQ-9 tool: In the past 2 weeks, have you been bothered by: <ol style="list-style-type: none"> Little interest or pleasure in doing things? Feeling down, depressed or hopeless? If either two questions are positive, continue with the PHQ-9 No to both questions indicates that depression is unlikely 	<ul style="list-style-type: none"> Consider referral to behavioral health professional
<p>Assess Oxygenation Status (1-3)</p>	<ul style="list-style-type: none"> Consider office baseline pulse oximetry If O₂ sat < 94%, consider need for ABG Obtain ABG for patients with FEV₁ 	<ul style="list-style-type: none"> PaO₂ < 55 mmHg or SaO₂ ≤ 88% or PaO₂ between 55-60 mmHg or SaO₂ of ≤ 89% with signs of hypoxia including pulmonary 	<ul style="list-style-type: none"> Order ABG Prescribe long term oxygen therapy (LTOT) a minimum of 15 hours/day, goal is to maintain O₂ sat ≥ 90% at rest and during 	<ul style="list-style-type: none"> Consider repeat ABG for significant change in clinical status Consider referral to specialist Durable Medical Equipment vendor

	<ul style="list-style-type: none"> • $\leq 40\%$ • Perform an appropriate assessment of the benefit of supplemental O₂ 	<ul style="list-style-type: none"> • hypertension, cor pulmonale, erythrocytosis, peripheral edema from right heart failure, or altered mental status • Comparing patient's exercise endurance and dyspnea both with and without ambulatory O₂ on a 6-minute endurance test 	<ul style="list-style-type: none"> • exercise • Instruct patients about the potential dangers of LTOT including respiratory suppression and fire hazard • Prescription should always include: <ul style="list-style-type: none"> ➤ Source (gas or liquid) ➤ Method of delivery ➤ Duration of use ➤ Flow rate at rest, during exercise, and during sleep 	<ul style="list-style-type: none"> • monitors equipment safety and proper functioning regularly
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Influenza Vaccine ⁽¹⁻³⁾	<ul style="list-style-type: none"> • Arrange office visit early in the flu season 	<ul style="list-style-type: none"> • Record date of last immunization 	<ul style="list-style-type: none"> • Vaccinate all COPD patients and their household contacts 	<ul style="list-style-type: none"> • Annually
Pneumococcal Vaccine ^(1-3, 10)		<ul style="list-style-type: none"> • Record date of last immunization 	<ul style="list-style-type: none"> • Vaccinate all patients with COPD once 	<ul style="list-style-type: none"> • For persons aged > 65 years, one-time revaccination if they were vaccinated > 5 years previously and were aged < 65 years at the time of primary vaccination
Management of Stable COPD ^(1-3, 14)	<ul style="list-style-type: none"> • See staged treatment regimen according to COPD Stage • Assess Quality of 	<ul style="list-style-type: none"> • Symptom driven • COPD stage driven (<i>see table 2</i>) • Assess QOL 	<ul style="list-style-type: none"> • <i>See table 2</i> • Use validated QOL tool 	<ul style="list-style-type: none"> • Assess nutritional status • Repeat spirometry testing if significant

	Life (QOL)	initially and as needed		changes in symptoms <ul style="list-style-type: none"> Assess QOL and provide for measures of improvement
Inhaler Use ^(2, 3)	<ul style="list-style-type: none"> Reassess inhaler technique frequently 	<ul style="list-style-type: none"> Direct observation of patient's inhaler technique is critical Assist patient and re-observe until correct 	<ul style="list-style-type: none"> Prescribe inhaled medications using an appropriate device, preferably with a spacer Teach patient correct technique for using Metered Dose Inhaler (MDI) Regularly review patient inhalation technique 	<ul style="list-style-type: none"> Reassess as indicated
Pulmonary Rehabilitation ⁽¹⁻³⁾	<ul style="list-style-type: none"> Refer patients with symptoms and functional limitations from pulmonary disease to a pulmonary rehabilitation program 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Refer patients to Pulmonary Rehabilitation Center 	<ul style="list-style-type: none"> Encourage attendance at Pulmonary Rehabilitation Communicate with rehab team about patient participation and progress Goal is at least 2 months participation to achieve lasting benefit
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Self Management ⁽¹³⁾	<ul style="list-style-type: none"> Provide self management 	<ul style="list-style-type: none"> Symptoms Inhaler technique 	<ul style="list-style-type: none"> Tailor educational contents to patient's 	<ul style="list-style-type: none"> Reassess educational needs,

	<p>education at multiple points of care including clinics, homes, pharmacies, EDs, and hospitals</p> <ul style="list-style-type: none"> • Self management education should include: <ul style="list-style-type: none"> ➢ COPD information and training in management skills ➢ COPD action plan 	<ul style="list-style-type: none"> • Written COPD action plan 	<p>age, culture ethnicity, and social, emotional and disease status</p> <ul style="list-style-type: none"> • COPD action plan: Provide each patient with a personalized written COPD action plan including instructions on daily management and how to recognize and handle worsening symptoms (exacerbations). The action plan may be based on symptoms 	<p>self management goals, inhaler use, action plan as needed at every opportunity in appropriate formats</p> <ul style="list-style-type: none"> • Update or review written COPD action plan at least annually
SUGGESTED GUIDELINES	PROCESS	IMPORTANT FINDINGS, MEASUREMENT & VALUE	INTERVENTIONS	FOLLOW-UP
Assessment and Management of Exacerbations ^(1-3, 11)	<ul style="list-style-type: none"> • At every visit, teach all patients how to identify COPD exacerbations early on and report them to a healthcare provider • Complete a COPD Exacerbation Action Plan 	<ul style="list-style-type: none"> • Change in H&P, CXR, ABG, O₂ sat, FEV₁ • Prodromal symptoms include sore throat, increased dyspnea or cough and cold symptoms 	<ul style="list-style-type: none"> • Reinforce early recognition of COPD exacerbations and following appropriate action plan • Give member a written action plan and review/update the plan at least 	<ul style="list-style-type: none"> • DM programs inform physician of patient's ability to recognize changes in symptoms and take action early

	<ul style="list-style-type: none"> • Assess for possible hospital at home care • Characteristics of patients not suitable for hospital at home 	<p>COPD at baseline</p> <ul style="list-style-type: none"> ➤ Hemodynamically stable ➤ No accessory respiratory muscle use ➤ No tachypnea <ul style="list-style-type: none"> • Patients without altered mental status, acute changes on radiography or ECG, abnormal pH, comorbid conditions • Characteristics of unsuitable patients: <ul style="list-style-type: none"> ➤ Impaired level of consciousness ➤ Acute changes on radiography ➤ Acute change on electrocardiography ➤ Arterial pH less than 7.35 ➤ Presence of comorbid medical conditions 	<ul style="list-style-type: none"> • Arrange for hospital at home care where the service is available and provider is familiar with this program 	<ul style="list-style-type: none"> • Home health agency reports patient progress at least daily
SUGGESTED GUIDELINES	PROCESS	IMPORTANT FINDINGS, MEASUREMENT & VALUE	INTERVENTIONS	FOLLOW-UP
Discuss End of Life Issues ⁽¹⁾	<ul style="list-style-type: none"> • Set aside time during an appropriate visit or 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Discuss patient's prognosis, end of life, palliative care, 	<ul style="list-style-type: none"> • Update end of life documents yearly or more frequently as

	<p>schedule an appointment specifically to discuss end of life issues</p> <p>NOTE: For patients with very severe COPD, early attention should be made to incorporate the patient's end of life preferences into the care plan</p>		<p>life supportive care, hospice, and advanced directives with patient and family while they are stable</p>	<p>appropriate</p>
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Table 1: Differentiating Asthma from COPD

Source: National Institute for Health and Clinical Excellence, Management of Chronic Obstructive Pulmonary Disease in Adults in Primary and Secondary Care

Clinical Features Differentiating COPD and Asthma		
	COPD	Asthma
Smoker or ex-smoker	Nearly all	Possibly
Symptoms under age 35	Rare	Common
Chronic productive cough	Common	Uncommon
Breathlessness	Persistent and progressive	Variable
Night-time waking with breathlessness and/or wheeze	Uncommon	Common
Significant diurnal or day-to-day variability of symptoms	Uncommon	Common

Table 2: Treatment for Symptomatic Patients with COPD

Therapy at Each Stage of COPD				
	I: Mild	II: Moderate	III: Severe	IV: Very Severe
Characteristics	<ul style="list-style-type: none"> • FEV₁/FVC < 70% 	<ul style="list-style-type: none"> • FEV₁/FVC < 70% 	<ul style="list-style-type: none"> • FEV₁/FVC < 70% 	<ul style="list-style-type: none"> • FEV₁/FVC < 70%
	<ul style="list-style-type: none"> • FEV₁ ≥ 80% predicted 	<ul style="list-style-type: none"> • 50% ≤ FEV₁ < 80% predicted 	<ul style="list-style-type: none"> • 30% ≤ FEV₁ < 50% predicted 	<ul style="list-style-type: none"> • FEV₁ < 30% predicted or FEV₁ < 50% predicted plus chronic respiratory failure
	Active reduction of risk factor(s); influenza vaccine			
	Add short-acting bronchodilator (when needed)			
	Add regular treatment with one or more long-acting bronchodilator (when needed)*			
	Add rehabilitation			
	Add inhaled glucocorticosteroids if repeated exacerbations			
				Add long-term oxygen if chronic respiratory failure Consider surgical treatments

*Several long-acting bronchodilator medicines have been associated with possible increased risk of worsening wheezing (bronchospasms) in some people.

*Post bronchodilator FEV₁ is recommended for the diagnosis and assessment of severity of COPD

Table 3: The Medical Research Council (MRC) Dyspnea Scale

Source: National Institute for Health and Clinical Excellence, Management of Chronic Obstructive Pulmonary Disease in Adults in Primary and Secondary Care

Grade	Degree of Breathlessness related to activities
1	Not troubled by breathlessness except on strenuous exercise
2	Short of breath when hurrying or walking up a slight hill
3	Walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace
4	Stops for breath after walking about 100 m or after a few minutes on level ground
5	Too breathless to leave the house, or breathless when dressing or undressing

Adapted from Fletcher CM, Elmes PC, Fairbairn MB et al. (1959) The significance of respiratory symptoms and the diagnosis of chronic bronchitis in a working population. *British Medical Journal* 2:257-66.

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