

Chronic Obstructive Pulmonary Disease (COPD)

Guideline History

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COPD

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COPD

Key Points

1. Consider the diagnosis of COPD in all smokers and ex-smokers over the age of 45; cigarette smoking accounts for about 85 percent of the risk of developing COPD.
2. Smoking cessation is the single most effective way to reduce the risk of developing COPD and slow the rate of decline in lung function compared to that of non-smokers.
3. The diagnosis of COPD rests on the clinical history and on the requirement that spirometry demonstrates an airflow limitation that is not fully reversible.
4. Spirometry is the most reproducible, standardized, and objective way of measuring airflow limitation and is closely associated with prognosis. (*Spirometry Testing in the Assessment & Diagnosis of COPD (SPR). See HEDIS® book for current measure*)
5. Airflow limitation that is not fully reversible is defined as being present when the postbronchodilator values for the ratio of forced expiratory volume in one second (FEV1) to forced vital capacity (FVC) (FEV1/FVC) is below 0.70
6. Severity of COPD is based on the level of airflow limitation; tailored therapy for COPD is based on the severity of symptoms and functional limitation.
7. Breathlessness and functional limitation can be rated numerically with the simple Modified Medical Research Council (MMRC) dyspnea scale.
8. Step-Care for bronchodilators:
 - Inhaled bronchodilators provide symptom relief
 - Long-acting bronchodilators provide sustained relief of symptoms in moderate to very severe COPD
 - Combination therapy is useful in moderate and very severe COPD
 - Adding inhaled glucocorticoids to optimize bronchodilator therapy reduces exacerbations in patients with both severe COPD (FEV1 < 50 percent predicted) and frequent exacerbations (> one/year); long-term use of oral glucocorticoids is not recommended.*(Pharmacotherapy Management of COPD (PCE). See HEDIS® book for current measure)*
9. Pulmonary rehabilitation reduces dyspnea, anxiety, and depression; improves exercise capacity and quality of life (QOL); and may reduce hospitalizations
 - Exercise alone or as part of a comprehensive rehabilitation program improves symptoms, self-confidence, endurance, and QOL.
10. Long-term oxygen for more than 15 hours/day prolongs life in hypoxemic patients with PaO₂ of 55 mm Hg or less.
11. Diagnostic sleep tests should be considered if patients with COPD have pulmonary hypertension, hypercapnia, and daytime somnolence or witnessed apneas.
12. End-of-life care in patients with end-stage COPD may be considered.

Goals of COPD Management for Physicians

- Relieve symptoms
- Prevent disease progression
- Improve exercise tolerance
- Improve health status
- Prevent and treat complications
- Prevent and treat exacerbations
- Reduce mortality

Source: Global Initiative for Chronic Obstructive Lung Disease: Executive Summary Updated 2007. Available at <http://www.goldcopd.org>. Accessed June 06, 2008

COPD Essentials for Health Professionals

- Primary care providers have a key role in the diagnosis and management of COPD.
- Consider diagnosis of COPD in adults with shortness of breath, with or without symptoms of cough and sputum production.
- Risk factors other than cigarette smoking history are important. Ten to 20 percent of cases may be due to environmental and occupational exposures.
- Pulmonary function testing is useful for determining the severity of COPD and distinguishing from asthma.
- Therapies are effective. Proactive treatment can improve the quality of life for patients with COPD.

WHY COPD? WHY NOW?

- While other major causes of death have been decreasing, COPD mortality has continued to rise.
- COPD is the 4th leading cause of death.
- 12 million Americans are diagnosed with COPD; research shows that many do not get optimal treatment.
- An additional 12 million Americans may have COPD and remain *undiagnosed*.
- Recent advances in treatment for COPD offer real opportunities to improve your patient's quality and length of life.

RISK FACTORS

- Look for COPD in patients who are over 40 and have:
 - Persistent or progressive dyspnea
 - Chronic cough or sputum production
 - Decline in level of activity

(continued on back)



U.S. Department of Health and Human Services
National Institutes of Health
National Heart, Lung, and Blood Institute

RISK FACTORS *(continued)*

- COPD is more likely if there is a history of smoking.
- Genetic factors and environmental or occupational exposures may also play a role: as many as *1 out of 6 Americans with COPD has never smoked.*

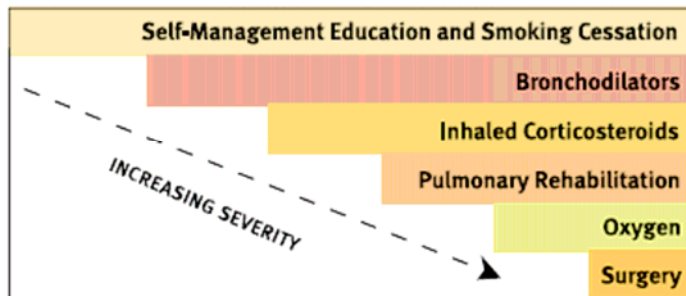
DIAGNOSIS: PULMONARY FUNCTION TESTING

- Perform or refer for a lung function test—spirometry—to determine the severity. Spirometry with bronchodilator testing may distinguish COPD from asthma.
- A criterion for diagnosis of COPD is a postbronchodilator $FEV_1/FVC < 0.7$.

TREATMENT

- Aggressive management of COPD can make a difference for the patient.
- Advances in therapies have been shown to improve survival or quality of life for COPD patients.
- COPD patients should receive professional assistance for smoking cessation.

TREATMENT OPTIONS FOR COPD



COPD **Learn More Breathe Better**

While there is no cure, early detection and treatment of COPD can slow the disease and improve quality of life. Learn more at www.LearnAboutCOPD.org.

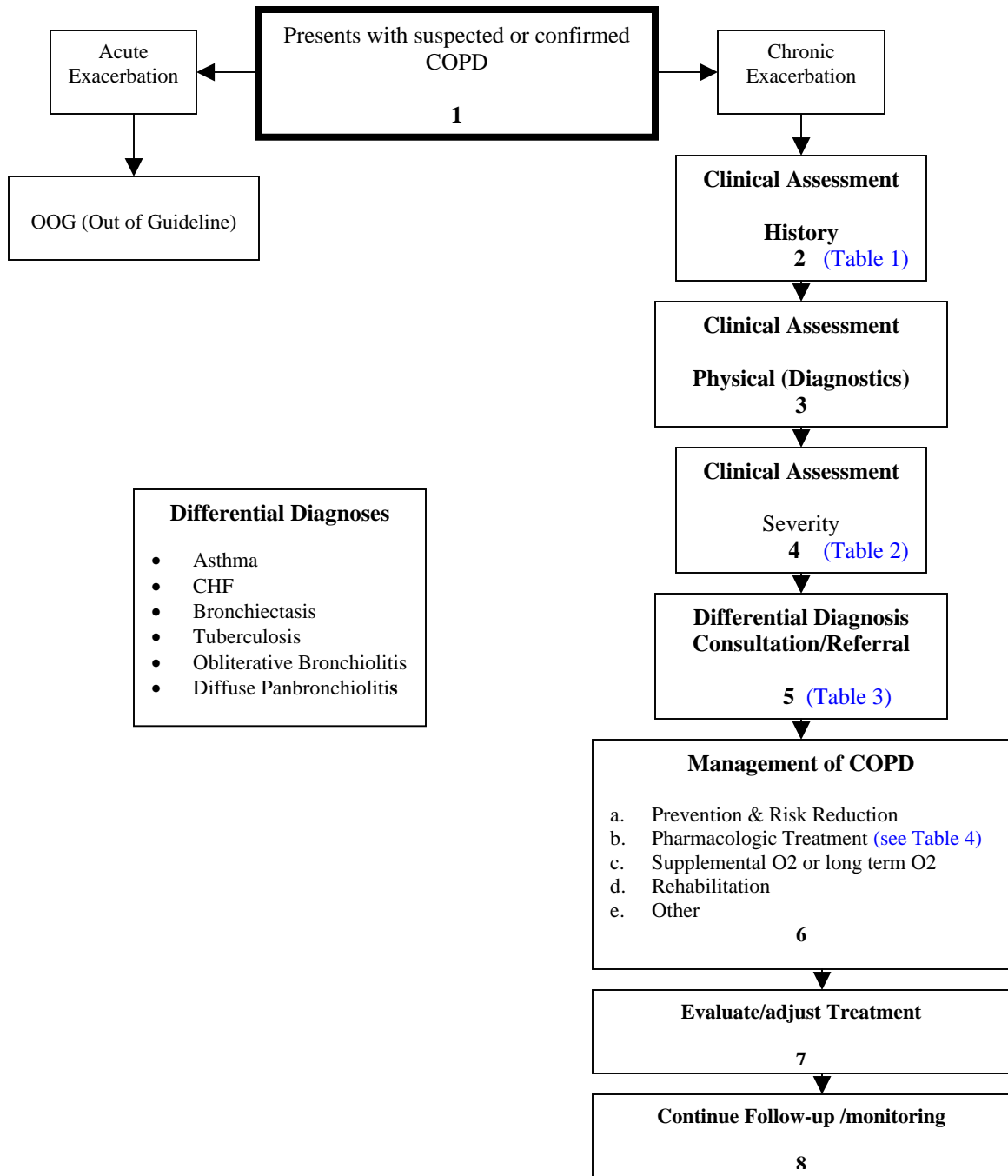


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COPD Algorithm



COPD

Annotations

1. Presents with suspected or confirmed COPD
 - a. Cough
 - b. Sputum Production
 - c. Dyspnea on Exertion or at Rest

Episodes of acute worsening of these symptoms often occur.

2. **History.** All patients with known or suspected COPD should have a focused history
 - a. Assess for risk factors:

Table 1- Risk Factors for COPD
Genes
Exposure to particles
• Tobacco smoke
• Occupational dusts, organic and inorganic
• Indoor air pollution from heating and cooking with biomass in poorly vented dwellings
• Outdoor air pollution
Lung Growth and Development
Oxidative stress
Gender
Age
Respiratory infections
Socioeconomic status
Nutrition
Comorbidities

Source: GOLD (2007). Global Strategy for Diagnosis, Management, and Prevention of COPD. Figure 3.1 Risk Factors for COPD. Pg. 16. Retrieved June 2008 from <http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=989>

- b. Assess signs and symptoms
 - c. Other Medical history, Family Hx, Social Hx
3. **Physical exam** should include assessment of airflow obstruction, spirometry, and oximetry if $FEV_1 \leq 50\%$. Spirometry should be obtained in all stable patients suspected of or having a diagnosis of COPD. Spirometry should measure: Forced Vital Capacity (FVC) & Forced Expiratory Volume in one second (FEV_1). Calculate the FEV_1/FVC ratio. Spirometric results are expressed as % Predicted using appropriate normal values for the person's sex, age, and height. Patients with COPD typically show a decrease in both FEV_1 and FEV_1/FVC . The degree of spirometric abnormality generally reflects the severity of COPD. However, both symptoms and spirometry should be considered when developing an individualized management strategy for each patient. If spirometry is unavailable, use all other available tools: i.e. Diagnostic Imaging, PFT's, sleep studies, exercise testing, respiratory muscle function tests, & ABG's.

COPD Annotations

4. Table 2 -Classification of Severity of COPD

Classification of Severity of COPD		
Stage	Characteristics	
0	At Risk	<ul style="list-style-type: none"> ➤ Normal spirometry ➤ Chronic symptoms
1	Mild COPD	<ul style="list-style-type: none"> ➤ $FEV_1/FVC < 70\%$ ➤ $FEV_1 \geq 80\%$ predicted ➤ With or without chronic symptoms (Cough sputum production)
2	Moderate COPD	<ul style="list-style-type: none"> ➤ $FEV_1/FVC < 70\%$ ➤ $50\% \leq FEV_1 < 80\%$ predicted ➤ With or without chronic symptoms (Cough sputum production)
3	Severe COPD	<ul style="list-style-type: none"> ➤ $FEV_1/FVC < 70\%$ ➤ $30\% \leq FEV_1 < 50\%$ predicted ➤ With or without chronic symptoms (Cough sputum production)
4	Very Severe COPD	<ul style="list-style-type: none"> ➤ $FEV_1/FVC < 70\%$ ➤ $FEV_1 < 30\%$ predicted or $FEV_1 < 50\%$ predicted plus chronic respiratory failure

Source: GOLD (2007). Global Strategy for Diagnosis, Management, and Prevention of COPD. Figure 1.2 Spirometric Classification of COPD Severity Based on Post – Bronchodilator FEV_1 . Pg. 3. Retrieved June 2008 from <http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=989>

5a. Differential Diagnosis

Table 3: Differential Diagnosis of COPD	
COPD	Onset in mid-life. Symptoms slowly progressive. Long smoking history. Dyspnea during exercise. Largely irreversible airflow limitation.
Asthma	Onset early in life (often childhood). Symptoms vary from day to day. Symptoms at night/early morning. Allergy, rhinitis, and/or eczema also present. Family history of asthma. Largely reversible airflow limitation.
CHF	Fine basilar crackles on auscultation. Chest X-ray shows dilated heart, pulmonary edema. Pulmonary function tests indicate volume restriction, not airflow limitation
Bronchiectasis	Large volumes of purulent sputum. Commonly associated with bacterial infection. Coarse crackles/clubbing on auscultation. Chest X-ray/CT shows bronchial dilation, bronchial wall thickening.
Tuberculosis	Onset all ages. Chest X-ray shows lung infiltrate or nodular lesions. Microbiological confirmation. High local prevalence of tuberculosis.
Obliterative Broncholitis	Onset in younger age, nonsmokers. May have history of rheumatoid arthritis or fume exposure. CT on expiration shows hypodense areas.
Diffuse Panbronchiolitis	Most patients are male and nonsmokers. Almost all have chronic sinusitis. Chest X-ray and HRCT show diffuse small centrilobular nodular opacities and hyperinflation.

Source: GOLD (2007). Global Strategy for Diagnosis, Management, and prevention of COPD. Figure 5.1.7 Differential Diagnosis of COPD. Pg. 39.

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Annotations continued....

5b. Consider referral or consultation with specialist

- Atypical presentation of COPD or worsening of symptoms
- Exclusion of other pulmonary disorders
- Suspicious chest X-ray i.e.persistent infiltrates
- Decline in functional impairment or poor response to therapy
- Surgical Consultation
- Severe disease, including persistent dyspnea with activities of daily living despite adequate therapy, or frequent recurrent exacerbations
- Eval for O₂ therapy: continuous, nocturnal, transtracheal
- Suspected sleep disturbance
- Frequent hospitalizations i.e. Chronic Respiratory Failure or multi-system disease
- Poor adherence/noncompliance
- Rapid and/or progressive worsening of (especially irreversible) airways obstruction
- Consults for Allergies, EENT, Psychiatrist, Cardiology

6. Management of COPD

- a. Prevention & Risk Management. This should include patient education regarding
 - i. **Disease:** Type of COPD
 - ii. **Tobacco Cessation:** Sentara provides The "Get Off Your Butt: Stay Smokeless for Life" program. Information on other classes is available from 1-800-SENTARA.
 - iii. **Medications:** Should include dosage, schedule, purpose, side effects, potential interactions
 - iv. **Vaccinations:** Annual Influenza vaccine is recommended for COPD patients unless contraindicated. A Pneumococcal vaccine is recommended for COPD patients (every 5 years) 65+ and those under age 65 with FEV₁ <40 % predicted
- v. **Non Pharmacologic Treatment**
 1. **ADL's:** Energy conservation, exercise and other aspects of daily living.
 2. **Nutrition**
 3. **Pulmonary Rehabilitation:**
 - Improves exercise capacity (Evidence A).
 - Reduces the perceived intensity of breathlessness (Evidence A).
 - Improves health-related quality of life (Evidence A).
 - Reduces the number of hospitalizations and days in the hospital (Evidence A).
 - Reduces anxiety and depression associated with COPD (Evidence A).
 - Strength and endurance training of the upper limbs improves arm function (Evidence B).
 - Benefits extend well beyond the immediate period of training (Evidence B).
 - Improves survival (Evidence B).
 - Respiratory muscle training is beneficial, especially when combined with general exercise training (Evidence C).
 - Psychosocial intervention is helpful (Evidence C).

Source: GOLD (2007). Global Strategy for Diagnosis, Management, and Prevention of COPD. Figure 5.3-10 Benefits of Pulmonary Rehabilitation in COPD. Retrieved June 2008 from <http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=989>

4. **Oxygen use:** Indicated for severe chronic respiratory failure, Long term O₂ therapy can improve survival rate, There is no convincing evidence that mechanical ventilatory support has a role in the routine management of stable COPD.
5. **Self-Management**
6. **Surgery**
7. **Support**
8. **Resources**

COPD

Medication Treatment

Table 4

Medications	Tier	Brand Name	Formulation	Delivery	Dosing	Additional Notes
Short-acting beta-2-agonists for the treatment of COPD						
Albuterol sulfate						
	2	Proventil HFA	90 mcg/ inhalation	MDI	2 inhalations q 4-6 h PRN	
	3	Ventolin HFA	90 mcg/ inhalation	MDI	2 inhalations q 4-6 h PRN	
	3	ProAir HFA	90 mcg/ inhalation	MDI	2 inhalations q 4-6 h PRN	
	1	generic (single-dose vial)	2.5 mg base/ 3 mL	Nebulizer	2.5 mg q 6-8 h PRN	
	1	generic (multi-dose vial)	2.5mg base/ 0.5mL	Nebulizer	2.5 mg q 6-8 h PRN	
	3	AccuNeb	0.63 or 1.25 base/ 3 mL	Nebulizer		
Pirbuterol	2	Maxair Autohaler	200 mcg/ inhalation	MDI	2 inhalations q 4-6 h PRN	
Metaproterenol sulfate						
	2	Alupent	0.65 mg/ inhalation	MDI	2 inhalations q 4-6 h PRN	Has one hour onset of action
	1	generic	10, 20 mg tablets	oral tablet	20 mg q 4-6 h	* Questionable as to whether to include
Terbutaline sulfate	1	generic	2.5 & 5 mg tablets	oral tablet	2.5-5 mg orally q 6-8 h (max 15 mg/day)	* Questionable as to whether to include
Levalbuterol						
	3	Xopenex	0.31, 0.63, 1.25 mg/ 3mL	Nebulizer	0.63-1.25 mg q 4-6 h	
	3	Xopenex HFA	45 mcg/ inhalation	MDI	2 inhalations q 4-6 h PRN	
Long-acting beta-2-agonists for the treatment of COPD						
Formoterol Fumarate	2	Foradil Aerolizer	12 mcg/ capsule	DPI	One inhalation q 12 h	I didn't see anywhere where you take this drug orally in 2-3 divided doses
	4	Perforomist	20 mcg/ 2 mL	Nebulizer	20 mcg q 12 h	
Salmeterol	2	Serevent Diskus	50 mcg/ blister	DPI	One inhalation q 12 h	
Arformoterol	4	Brovana	15 mcg/ 2mL	Nebulizer	15 mcg q 12 h	
Short-acting anticholinergic meds for the treatment of COPD						
Ipratropium Bromide	3	Atrovent HFA	17 mcg/ inhalation	MDI	2 inhalations qid PRN (Max: 12 inhalations/ 24 h)	For Exacerbations: should be administered in combination with a SABA
	1	generic	250 mcg/ mL	Nebulizer	500 mcg qid PRN	

Medications	Tier	Brand Name	Formulation	Delivery	Dosing	Additional Notes
Long-acting anticholinergic for the maintenance treatment of bronchospasm associated with COPD						
Tiotropium Bromide	2	Spiriva HandiHaler	18 mcg/ capsule	DPI	One capsule oral inhalation once/ 24 h	
Combination short-acting beta-2-agonists plus an anticholinergic in one inhaler						
Albuterol sulfate/ ipratropium	2	Combivent	90 mcg albuterol/ 18 mcg ipratropium/ inhalation	MDI	2 inhalations qid (Max: 12 inhalations/ 24h)	Not recommended to be used with a LABA or tiotropium
	3	DuoNeb	2.5 mg albuterol/ 0.5 mg ipratropium/ 3 mL	Nebulizer	2.5 mg/ 0.5 mg qid PRN (Max: 6 doses/ 24h)	Not recommended to be used with a LABA or tiotropium
Methylxanthines for the treatment of COPD						
Aminophylline	1	generic	100, 200 mg tablets	oral tablet	380 mg/ 24 h in 3-4 doses for three days. Then titrate to desired serum concentration. (Max: 928 mg/ 24 h; equivalent to theophylline 800 mg/ 24 h)	Target Serum Conc: 10 mg/ L. Refer to dosing guidelines.
Theophylline SR	1	generic	450 mg ER tablets; 100, 125, 200, 300 mg ER caps	oral tablet/ capsules	300-600 mg/ 24 h	Target Serum Conc: 10 mg/ L. Refer to dosing guidelines.
	2	Uniphyll	400, 600 mg ER tablets	oral tablets	400-600 mg/ 24 h	Target Serum Conc: 10 mg/ L. Refer to dosing guidelines.
Inhaled Corticosteroids for the treatment of COPD						
Budesonide						
	2	Pulmicort Flexhaler	90, 180 mcg/ inhalation	DPI	360-720 mcg bid	
	2	Pulmicort Respules	0.25, 0.5 mg/ 2 mL	Nebulizer	250-500 mcg 1x/d or bid OR 1.0 mg 1x/d	
Flunisolide	2	AeroBid	250 mcg/ inhalation	MDI	500-1000 mcg bid	
Fluticasone						
	2	Flovent Diskus	50, 100, 250 mcg/ blister	DPI	100-500 mcg bid	
	2	Flovent HFA	44, 110, 220 mcg/ inhalation	MDI	88-440 mcg bid	
Mometasone	2	Asmanex Twisthaler	220 mcg/ inhalation	DPI	220-440 mcg 1x/d or bid (Max: 880 mcg/ d)	

Medications	Tier	Brand Name	Formulation	Delivery	Dosing	Additional Notes
Beclomethasone Dipropionate	3	Qvar HFA	40, 80 mcg/ inhalation	MDI	40-320 mcg bid	
Triamcinolone	3	Azmacort	75 mcg/ inhalation	MDI	150 mcg tid-qid OR 300 mcg bid	
Combination long-acting beta-2-agonists plus an Inhaled Corticosteroid for the treatment of COPD						
Fluticasone Propionate/ Salmeterol Xinafoate	2	Advair Diskus	250 mcg fluticasone/ 50 mcg salmeterol/ blister	DPI	One inhalation bid	Also comes in other dosage strengths but this strength only FDA approved for COPD
Budesonide/ Formoterol	2	Symbicort HFA	80, 160 mcg budesonide/ 4.5 mcg formoterol/ inh.	MDI	2 inhalations bid	
Systemic Corticosteroids for the treatment of COPD only after consultation with a pulmonologist						
Prednisone	1	generic	1, 2.5, 5, 10, 20, 50 mg tablets	oral tablets	Adults: 5-60 mg/ 24 h in 1-4 divided doses orally	During exacerbation: 30-40mg/day for 7-10 days
Methylprednisolone	1	generic	4, 8 mg tablets	oral tablets	Adults: 4-64 mg/ 24 h in 1-4 divided doses orally	Most sources recommend a tapering schedule over 7-10 days

Name: _____	DOB: _____
MD: _____	Year of Diagnosis: _____
Co-morbid Conditions:	

INTERVENTIONS	Baseline Date	Date	Date	Date	Date
COPD Stage/Severity					
Tobacco Status (Y / N)					
Counseling (Y / N) Pharmacologic (Y / N)					
Weight / Height / BMI					
Shortness of Breath Controlled (Y/N)					
Spirometry (FEV ₁ & FVC %Pred Norm)					

INTERVENTIONS cont.	Date	Date	Date	Date	Date
COPD Stage					
Tobacco Status (Y / N)					
Counseling (Y / N) Pharmacologic (Y / N)					
Weight / Height / BMI					
Shortness of Breath Controlled (Y/N)					
Spirometry (FEV ₁ & FVC % Pred Norm)					

ANNUAL or PRN	Results	Results	Results	Results	Results
ABGs (Initial and as needed)					
Pulse Oximetry (Rest)					
Pulse Oximetry with 6-minute walk					
Oxygen Therapy Indicated (Y/N)					
Pulmonary Rehab Indicated (Y/N)					
Anxiety/Depression Screen					
Obstructive Sleep Apnea Screen					
Blood Work					
PREVENTION	Date	Lot #			
Flu Vaccine (annual)					
Pneumococcal Vaccine (every 5 years)					
REFERRAL					
Pulmonary Rehab: Specialist: Dietician:					

COPD
COPD Action Plan

Name: _____ DOB: _____ Date: _____
 Phone: (H) _____ (C) _____ (W) _____
 Address: _____ City _____ Zip _____
 Emergency Contact: _____ Relationship _____ Phone _____
 Doctor _____ Phone _____ Fax _____

Stage & Severity level:
 0 At Risk 1 Mild COPD 2 Moderate COPD 3 Severe COPD 4 Very Severe COPD

Symptoms		Treatment		
Well <ul style="list-style-type: none"> ➤ Usual Medications control COPD ➤ Able to breath w/o difficulty ➤ Small amount of sputum ➤ No activity restrictions 	Green Zone FEV ₁ _____ FVC _____ RA O ₂ Sat _____ % <input type="checkbox"/> CO ₂ Retainer O ₂ : L/min _____ Hrs/Day _____	Controllers & Relievers	How Much	When
		Regular Medications		
		Continue usual activities	Exercise as directed	Take your medications as directed
Sick <ul style="list-style-type: none"> ➤ Increased shortness of breath with usual activity ➤ Coughing more than usual ➤ Increased wheezing ➤ Increased sputum or it has changed in color ➤ Use of short acting medicines more often ➤ More tired or restless 	Yellow Zone	Inhalers/Nebulizers as directed	If no improvement, Call 911	If returns to Green Zone, Exercise & Medications as directed
		Call your home care nurse or doctor in the next 24 hours		
Emergency <ul style="list-style-type: none"> ➤ Very short of breath ➤ Chest pain ➤ Blood in sputum ➤ Anxious, panicky, fearful ➤ Confused, agitated ➤ Drowsy 	Red Zone	Call 911 RIGHT AWAY when:		

Patient Education

	Date	Initials	Date	Initials	Date	Initials	Date	Initials
➤ Medication Teaching								
➤ Flu Shot								
➤ Pneumonia Shot								
➤ Diet								
➤ Breathing Techniques								
➤ Tobacco Cessation								
➤ Activity								
➤ Energy Conservation								

Resources

Pulmonary Rehab Locations

Sentara Norfolk General Hospital

600 Gresham Drive
Norfolk, VA 23507
(757) 388-3921

Sentara Williamsburg Regional Medical Center

Cardiac And Respiratory
Exercise/Education Service (CARES)
100 Sentara Circle
Williamsburg, VA 23188
(757) 984-7125

For additional information about hospital services
Call 1-800-SENTARA or visit www.sentara.com

COPD Program, Sentara Hospice or Bridge Programs

For more information on these services, please call (757) 549-7755 or (888) 461-5649.

Better Breathers Clubs in Virginia (American Lung Association of Virginia)

For the most current locations see <http://www.lungusa.org>

<p><u>Alexandria</u> Last Tuesday of every month (September - June) from 12 noon to 1:30PM INOVA Alexandria Heart Center, 4320 Seminary Road, Cardiopulmonary Rehabilitation Classroom Jeanmarie Gallagher, 703-504-3398, jeanmarie.gallagher@inova.com</p>	<p><u>Charlottesville</u> Last Thursday of every month from 1:00PM to 2:30PM UVA Northbridge Clinic, 1st Floor Conference Room Michelle K. Dumont, 434-924-5381 or mkm4d@hscmail.mcc.virginia.edu</p>
<p><u>Fredericksburg</u> 4th Thursday of every month from 3:00PM to 4:00PM Tompkins Martin Medical Plaza, Suite 414 1221 Lee St. Betty Ann Brooks, 540-741-1347</p>	<p><u>Hanover</u> 2nd Thursday of every other month from 12:30PM to 1:30PM (Jan, Mar, May, July, Sept, Nov) Bon Secours Memorial Regional Medical Center, Medical Office Building One, Education Room, 8260 Atlee Road, Mechanicsville Jacqueline Bunn-Gray and Cynthia Claude, 804-764-7632, cclaude130@aol.com, jackie_bunn@bshsi.com</p>
<p><u>Lynchburg</u> Last Monday of every month (except Jan & Feb) from 6:30PM to 8:00PM (6:30 Light Refreshments; 7:00 Meeting) Forest Library, 15583 Forest Road, Forest Leo & Betty Simpson, 540-297-3788, bettyleo@peoplepc.com</p>	<p><u>Richmond</u> 3rd Thursday of every month from 1:30PM to 3:00PM ALAV Headquarters, 9221 Forest Hill Avenue, Merck Training Center David Sanders (804-327-0388) fdsanders@msn.com & Russell Glover (804-378-0628) russellglover@verizon.net</p>
<p><u>Suffolk</u> 2nd Monday of every month at 2:00PM Obici Wellness Center (across from Obici Hospital and adjacent to YMCA), 2769 Godwin Blvd Phyllis Lilly, 757-934-8732, plily@obici.com</p>	

Reference Sites

[National Heart, Lung, Blood Institute](#)

[National Institutes of Health](#)

[GOLD](#)

[Medline](#)

[American Lung Association](#)

References

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