Chronic Obstructive Pulmonary Disease (COPD)

A VA Clinician's Guide

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U.S. Department of Veterans Affairs

Veterans Health Administration

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Key Messages

Evaluate all patients with symptoms and/or a history of exposure to risk factors for COPD and use spirometry to make the diagnosis.	4
Encourage all patients to quit smoking regardless of COPD severity.	6
Give all Veterans with COPD the influenza vaccine annually and pneumococcal vaccines as indicated by age.	7
Use a LAMA or LABA as initial therapy for most patients in Group A and Group B. Short-acting agents, SAMA or SABA, should only be used for immediate relief of symptoms.	10
Use LAMA as first line therapy for patients in Group C and D. Progress to combination therapy, usually LAMA + LABA, if monotherapy is not effective.	11
Treat an exacerbation with short-acting beta-agonist(s), continue long-acting bronchodilator(s), and give short courses of oral corticosteroids (5-days) and antibiotics (5–7 days) when indicated.	21

Key Facts

Almost 16 million Americans have been diagnosed with chronic obstructive pulmonary disease (COPD). The actual prevalence is likely much higher since many people with low pulmonary function are not aware of their condition and remain undiagnosed.[1,2,3]

COPD was the 4th leading cause of death in the United States in 2017 and the 2nd most common cause of admission for an ambulatory care sensitive condition (ACSC) from 2018–2019.[4,5]

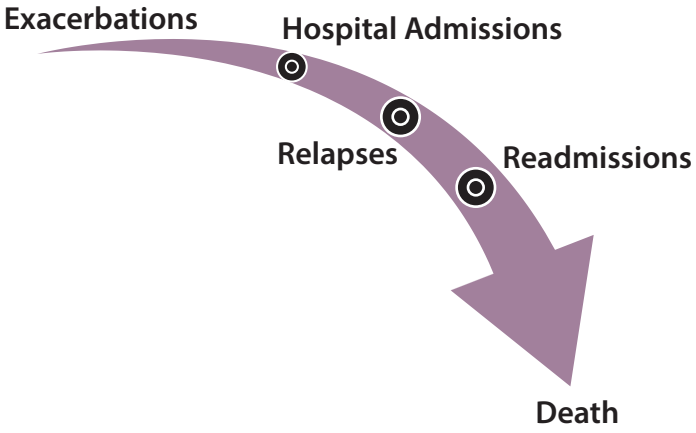
Figure 1. One Person Dies Every Four Minutes from Complications Related to COPD[6]

The Importance of COPD Exacerbations

An acute COPD exacerbation is any worsening of a patient's dyspnea, cough, or sputum from their baseline symptom variability.[7] Acute exacerbations are significant since the risk of death increases as the number and severity of exacerbations increase.[7,8]

Exacerbations are acute events that can change the trajectory of the disease in a person with COPD[7,8]

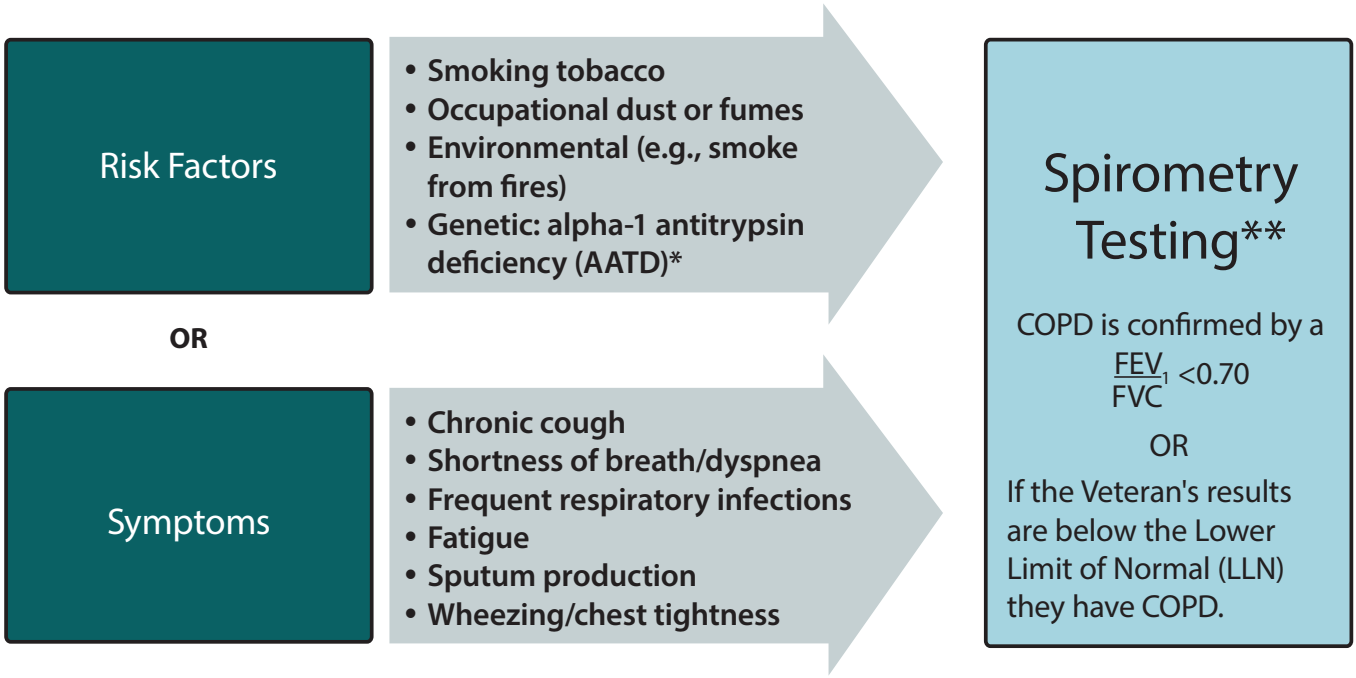
Figure 2. Trajectory of COPD After Experiencing Exacerbations[7,8]



Initial Assessment and Diagnosis

COPD should be considered in any patient with symptoms (e.g., chronic cough, dyspnea) or a history of exposure to risk factors.[9] Airway obstruction is the hallmark of COPD, which is typically confirmed using spirometry in patients with risk factors and symptoms consistent with COPD.

Figure 3. Risk Factors for and Symptoms of COPD[9–12]



*Testing (serum and/or genetic) is required to diagnose AATD. Consider testing in patients < age 45 at onset of symptoms who have minimal exposure to tobacco or other environmental risk factors. **Tested after administration of bronchodilator. If FEV_1/FVC is between 0.6 to 0.8 range, repeat spirometry to confirm diagnosis. FEV_1 = forced expiratory volume in one second; FVC = forced vital capacity.

Did You Know

Chronic inhalation of anything combustible can cause COPD. This includes cannabis and tobacco in any inhaled forms or respiratory routes of administration (e.g., pipe, cigarette, water pipe/hookah, and vaping).[13,14] Eliminating exposure to tobacco smoke and reducing exposure to air pollution can prevent COPD in most individuals.[7,9]

Evaluate all patients with symptoms and/or a history of exposure to risk factors for COPD and use spirometry to make the diagnosis.

Developing a Treatment Plan for COPD

Simply prescribing an inhaler for a patient with COPD is not a treatment plan. Treatment decisions for COPD patients should be individualized, multi-modal, and guided by symptoms, symptom severity, comorbidities, and the frequency of acute exacerbations.[9] (Note: a patient's ability to use an inhaler device and their preference should be incorporated into the treatment plan.)

Figure 4. Elements of a COPD Treatment Plan[9]

Smoking Cessation	Quitting has the greatest impact on slowing COPD progression.
Vaccines	Influenza vaccine helps reduce COPD exacerbations and hospitalizations. Pneumococcal vaccine PPSV23 reduces the rates of community-acquired pneumonia in patients with COPD.
Pharmacotherapy for COPD	Pharmacotherapy reduces symptoms, frequency and severity of exacerbations, and improves exercise tolerance and health status.
Non-pharmacologic Therapies	Proper nutrition, exercise, and use of pulmonary rehabilitation helps improve quality of life and reduce exacerbations.
Treating Other Comorbidities	The most common cause of death in Veterans with COPD is cardiovascular disease. Addressing this, along with other common comorbidities, like depression, lung cancer, obesity, and osteoporosis, is vital to the overall health of patients with COPD.

Smoking Cessation

Ask every patient with COPD if they smoke tobacco. If they do, smoking cessation should be addressed. Smoking cessation improves survival in patients with COPD, including older patients.[15] Veterans who say they are ready to quit in the next 30 days should receive pharmacotherapy support (e.g., nicotine replacement, bupropion, or varenicline).[16]

Figure 5. Pathway for Addressing Tobacco Use – The 5 A's[16–18]

All Providers are Involved

Ask — About Tobacco Use
- Ask about type of tobacco, how much used daily, and prior experience in quitting.

Advise — To Quit Now
- Focus on benefits of quitting for COPD and other health concerns like cardiovascular disease.

Assess — Is the Patient Ready to Quit
- Is the patient ready to quit in the next 30 days? If "Yes," then proceed. If "No," then encourage quitting.

Assist — Offer and Connect to Treatment
- Prescribe pharmacotherapy and offer behavioral support.*

Arrange — Follow Up in 1 to 2 Weeks
- If patient accepts treatment, follow up in 1 to 2 weeks. If patient declines treatment, continue to encourage cessation at every visit.

*Behavioral supports with evidence for benefit include individual sessions, group sessions, or provider support via telephone or Quitline (the VA National Quitline is: 1-855-QUIT-VET (1-855-784-8838). See the Academic Detailing Service (ADS) **Tobacco Use Disorder Provider Guide** and ADS **Tobacco Use Disorder Quick Reference Guide** for more detailed information on pharmacotherapy for tobacco cessation (**www.pbm.va.gov**).

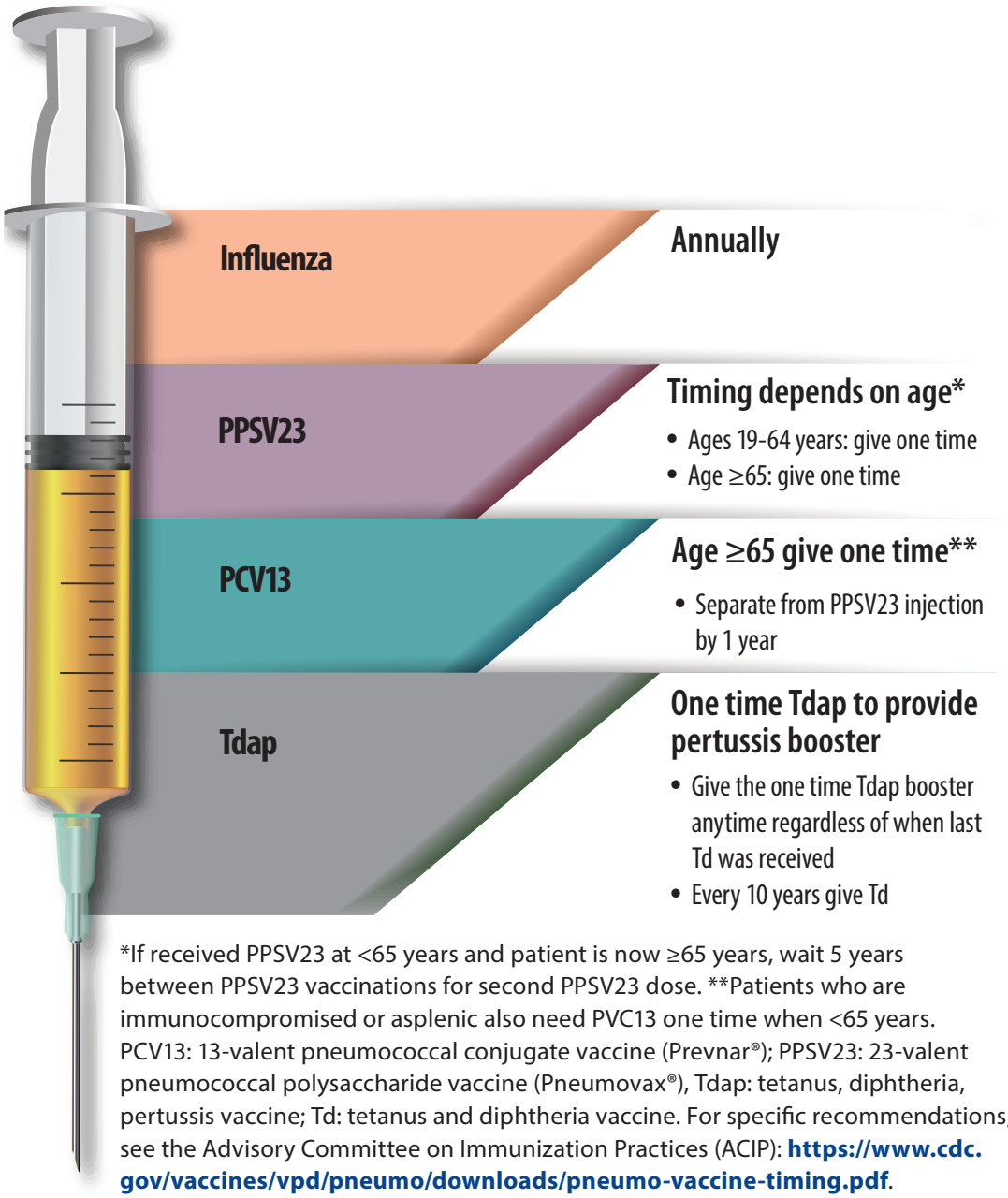
If the patient is not a current smoker or quits smoking, reducing exposure to secondhand smoke is essential. Encourage a no smoking policy for home, car and work settings to reduce exposure to secondhand smoke and prevent relapse.

Encourage all patients to quit smoking regardless of COPD severity.

Vaccines

Annual influenza vaccination can significantly reduce the incidence of lower respiratory infections and death in people with COPD.[9,19,20] The pneumococcal vaccine PPSV23 (23-valent) reduces the incidence of community-acquired pneumonia in COPD patients under 65 with an FEV <40% and in those with comorbidities.[21,22] Pneumococcal vaccines (13- or 23-valent), are recommended for all patients 65 years and older.

Figure 6. Vaccine Timing for Adults with COPD[9,21,22]



*If received PPSV23 at <65 years and patient is now ≥65 years, wait 5 years between PPSV23 vaccinations for second PPSV23 dose. **Patients who are immunocompromised or asplenic also need PVC13 one time when <65 years. PCV13: 13-valent pneumococcal conjugate vaccine (Prevnar®); PPSV23: 23-valent pneumococcal polysaccharide vaccine (Pneumovax®), Tdap: tetanus, diphtheria, pertussis vaccine; Td: tetanus and diphtheria vaccine. For specific recommendations, see the Advisory Committee on Immunization Practices (ACIP): **https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf**.

Give all Veterans with COPD the influenza vaccine annually and pneumococcal vaccines as indicated by age.

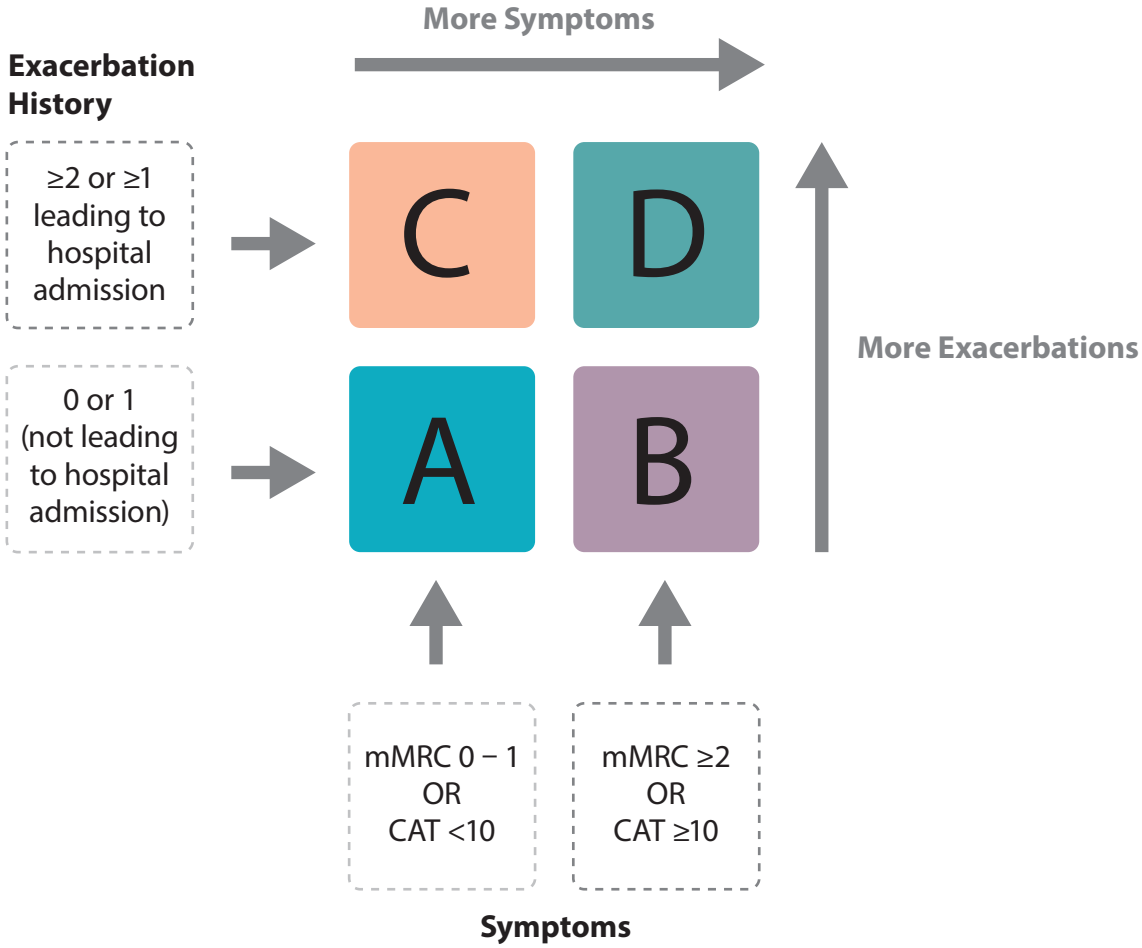
Pharmacotherapy for Stable (Non-exacerbating) COPD

Pharmacotherapy can reduce symptoms, decrease the risk and severity of exacerbations, and improve health status and exercise tolerance. Review the Veteran's exacerbation history and assess his or her symptoms to guide pharmacotherapy initiation and the need for medication changes.

Determining Treatment Group (GOLD A, B, C or D)[9,23–26]

The most widely used therapeutic strategy for treating COPD is from the Global Initiative for Chronic Obstructive Lung Disease (GOLD).[9]

Figure 7. ABCD Assessment Tool – GOLD Groups[25,26]



For this diagram, think of the Exacerbation History as the Y-axis and Symptoms as the X-axis.

- Groups A and C have a lower symptom burden (lower mMRC and CAT scores).
- Groups B and D have a greater symptom burden.
- Groups A and B have infrequent exacerbations.
- Groups C and D have frequent exacerbations.

To categorize a patient into a group (A–D), include both exacerbation history and symptoms. For example, if a patient has had three exacerbations in the past year and a CAT score of nine, they would be in group C.

CAT = COPD Assessment Test; mMRC = Modified Medical Research Council Breathlessness Scale; See **Appendix** for the full questionnaires. Exacerbation history is the number of exacerbations in the past year.

Table 1. Initial Treatment by GOLD Group[9]

Exacerbation History			
0 or 1 exacerbations not leading to hospital admission		≥2 exacerbations or ≥1 leading to hospital admission	
Assessment of Symptoms/Risk of Exacerbations			
Milder Symptoms	Worsening Symptoms	Milder Symptoms	Worsening Symptoms
mMRC 0–1 or CAT <10	mMRC ≥2 or CAT ≥10	mMRC 0–1 or CAT <10	mMRC ≥2 or CAT ≥10
Group A	**Group B**	**Group C**	**Group D**
Bronchodilator (long-acting or short-acting)	LAMA or LABA	LAMA	LAMA or LAMA + LABA*
Persistent symptoms – use a LAMA or LABA Occasional dyspnea – use a SAMA or SABA	If persistent symptoms on long-acting monotherapy then use LAMA + LABA		If persistent symptoms on maximal inhaler therapy, consultation with a pulmonologist is recommended.
Short-acting agents (SAMA or SABA) should be considered for patients on long-acting bronchodilators who need immediate relief.			

*Consider starting with LAMA + LABA if patient is highly symptomatic (e.g., CAT >20). Consider starting with LABA + ICS if patient has a history of asthma or CAT score >20 and eosinophil count (eos) ≥300 cells/µL or eos ≥100 cells/µL and ≥2 moderate exacerbations or >1 hospitalization. ICS = inhaled corticosteroid; LABA = long-acting beta$_2$ agonist; LAMA = long-acting muscarinic antagonist; SABA = short-acting beta$_2$ agonist; SAMA = short-acting muscarinic antagonist.

Long-acting bronchodilators are preferred over short-acting agents for initial treatment in Group A patients with persistent symptoms because they improve lung function, dyspnea, and health status as well as reduce exacerbations while short-acting agents only improve dyspnea and temporarily improve lung function.[9,27–30]

- First line: LAMA or LABA for persistent symptoms.
- SAMA or SABA can be considered in patients with only occasional dyspnea.
- SAMA or SABA can be added to long-acting bronchodilators in patients who need immediate relief, prescribed on an as-needed schedule.[9]

Group B

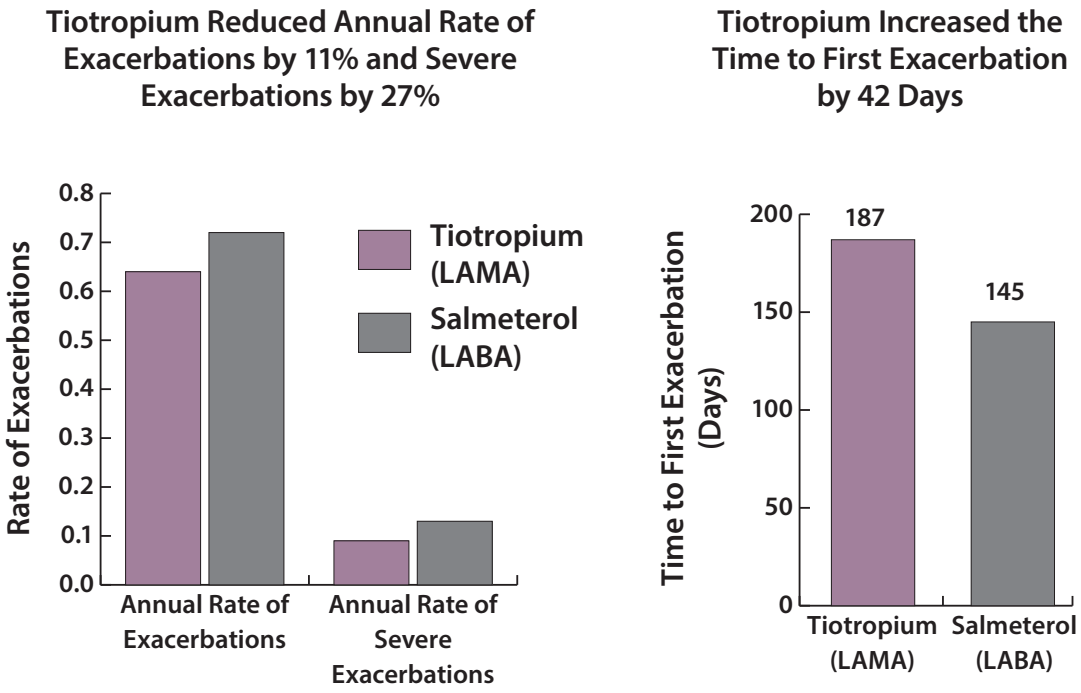
- First line: LAMA or LABA
  - In Group B patients, there is no evidence to recommend one class of long-acting bronchodilator over another for initial treatment.[9]

Use a LAMA or LABA as initial therapy for most patients in Group A and Group B. Short-acting agents, SAMA or SABA, should only be used for immediate relief of symptoms.

Group C

- First line: LAMA[30,31,32]
- LAMA + LABA can be used in patients whose symptoms are not controlled on monotherapy. Inhaled corticosteroids (ICS) should be reserved for patients with asthma or if symptoms are not controlled on LAMA + LABA.

Figure 8. Reduced Annual Rate of Exacerbations and Increased Time to First Exacerbation with Tiotropium (LAMA) Monotherapy Compared to Salmeterol (LABA)[31]

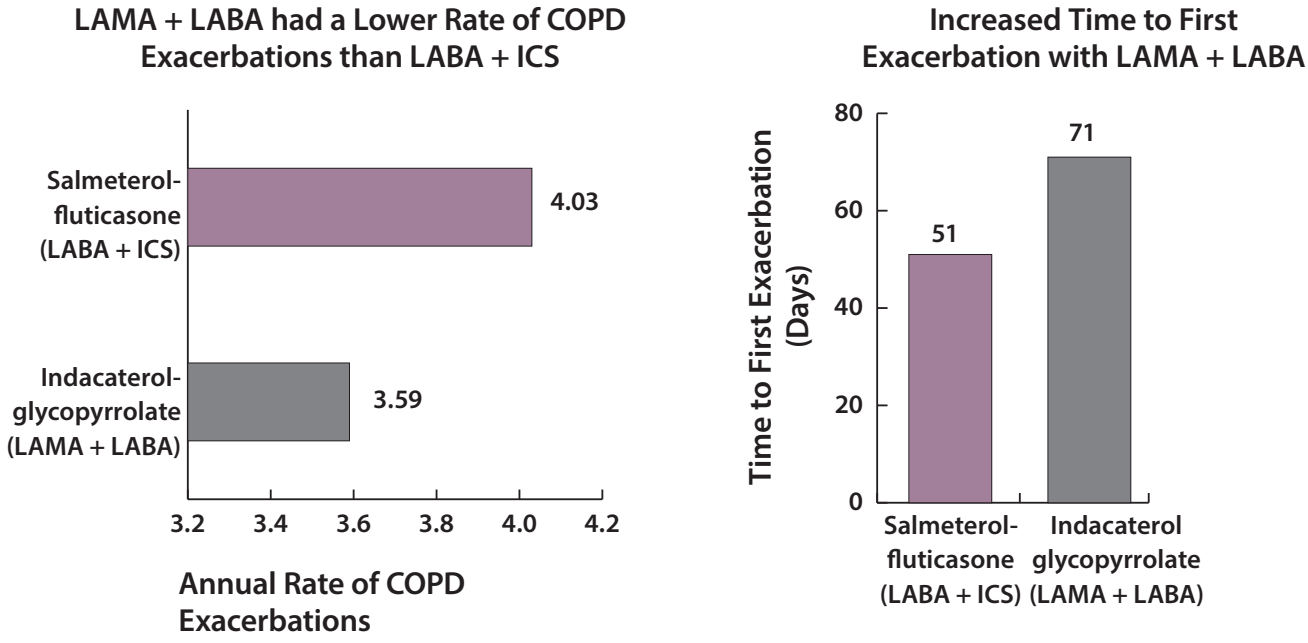


POET-COPD trial comparing tiotropium to salmeterol in patients with moderate-to-very-severe COPD and a history of exacerbations in the previous year ($p < 0.05$ for all comparisons in figures).

Group D

- First line: LAMA, consider LAMA + LABA if patient has more severe symptoms (e.g., CAT score >20)[9,33]
  - Combination of LAMA + LABA reduced COPD exacerbations and increases the time to first exacerbation compared to LABA + ICS.[33]
- Initial therapy with LABA + ICS can be considered in patients with:[9]
  - A history of asthma
  - Severe symptoms and eos ≥300 cells/µL
  - Blood eos ≥100 cells/µL and ≥2 moderate exacerbations or >1 hospitalization

Figure 9. Combination of LAMA + LABA Reduced COPD Exacerbations and Increased the Time to First Exacerbation Compared to LABA + ICS[33]



FLAME trial evaluating indacaterol-glycopyrrolate (LABA+LAMA) compared to salmeterol-fluticasone (LABA+ICS) in patients with COPD and a history of at least one exacerbation in the previous year. The trial was designed to evaluate the annual rate of all COPD exacerbations ($p < 0.001$ for all comparisons in figure).

Use LAMA as first line therapy for patients in Group C and D. Progress to combination therapy, usually LAMA + LABA, if monotherapy is not effective.

Follow Up Assessment and Treatment of COPD

Follow up treatment is based on how the patient responded:[9]

- ✓ If the patient had an adequate response to the initial treatment, then maintain it.
- ✗ If not, modify treatment based on whether patient is having continued dyspnea or if they are having exacerbations. If they are having both, then follow the recommendations for exacerbations.[9]

Figure 10. Assessing Treatment Response for All GOLD Groups[9]

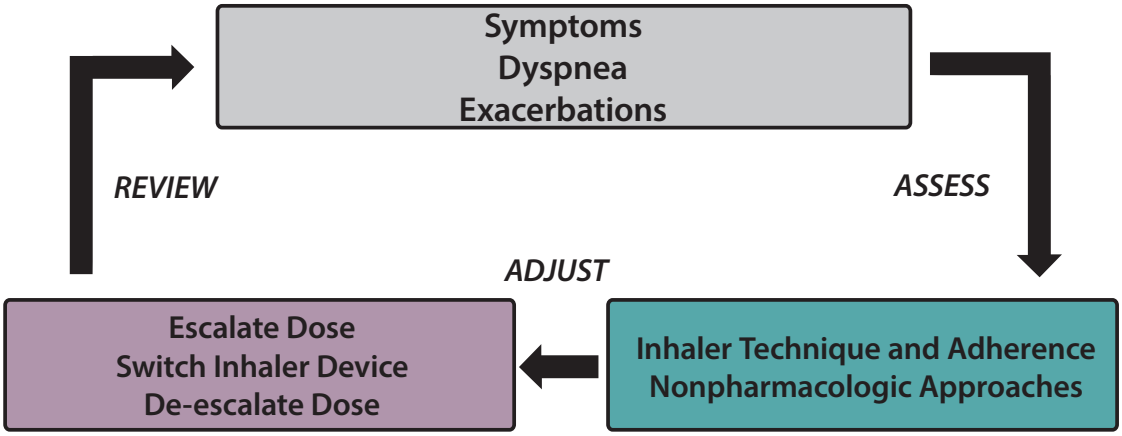


Figure 11. Proper Inhaler Technique is Critical for Effective COPD Pharmacotherapy

- ✓ *Provide instructions and demonstrate proper technique when prescribing an inhaler device.*
- ✓ *Spacers improve drug delivery when used with metered dose inhalers (MDI).*
- ✓ *Inhaler technique and adherence to therapy should be assessed before considering dose adjustments and/or changing therapy. (Links to VA Instructional Videos in the Veteran Health Library:* **Combivent Respimat, Pressurized Metered Dose Inhaler, HandiHaler, Mometasone Twisthaler, How to Use a Nebulizer***)*

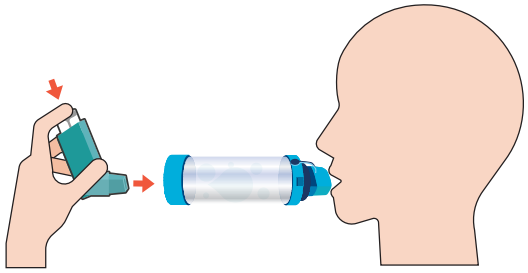


Table 2. At Follow-up Visit, Modify Treatment Based on Dyspnea and/or Exacerbations[9,10,34,35]

Dyspnea Pathway		
Initial Treatment	New Treatment	Continued Dyspnea?
LAMA or LABA	LAMA + LABA	Consider switching inhaler device(s) and/or using a different drug in the same class. Evaluate other causes of dyspnea. Consider referral to pulmonologist.
LABA + ICS	Determine if ICS is needed. For most patients, LAMA+ LABA should be used. If ICS is needed, then use LAMA+LABA+ICS	
Exacerbation Pathway		
Initial Treatment	New Treatment	Continued Exacerbations?
LAMA or LABA	LAMA + LABA	LAMA + LABA + ICS
	LABA + ICS • In patients with a history of asthma*	LAMA + LABA + ICS
LABA + ICS	Determine if ICS is needed. For most patients, LAMA+ LABA should be used. If ICS is needed, then use LAMA+LABA+ICS	Refer to pulmonologist for consideration of roflumilast or azithromycin.

*Consider if eos ≥300 cells/µL or if eos ≥100 cells/µL and ≥2 moderate exacerbations or >1 hospitalization. eos = blood eosinophil count; ICS = inhaled corticosteroid; LABA = long-acting beta$_2$ agonist; LAMA = long-acting muscarinic antagonist.

Table 3. Considerations for Starting Treatment with Inhaled Corticosteroids (ICS)[9,36]

Encourage Use	Consider Use	Advise Against Use
• History of asthma • History of hospitalization(s) for exacerbations of COPD • ≥2 moderate exacerbations of COPD/year • Blood eosinophils >300 cells/µL	• 1 moderate exacerbation of COPD/year • Blood eosinophils 100–300 cells/µL	• Repeated pneumonia events • Blood eosinophils <100 cells/µL • History of mycobacterial infection
Patient should be appropriately using one or two long-acting bronchodilators as maintenance therapy prior to considering ICS.		

Use of Inhaled Corticosteroids

Monotherapy with ICS is not recommended in patients with COPD unless the patient also has asthma, since it does not improve FEV_1 or decrease exacerbations.[9] Evidence shows that inhaled corticosteroids are most effective when used with long-acting bronchodilators in patients with severe COPD (Grades C and D). Blood eosinophil counts (eos) may help predict response to ICS (eos >300 cells/µL = greater likelihood to respond, eos <100 cells/µL = lower likelihood to respond).[9,37–39]

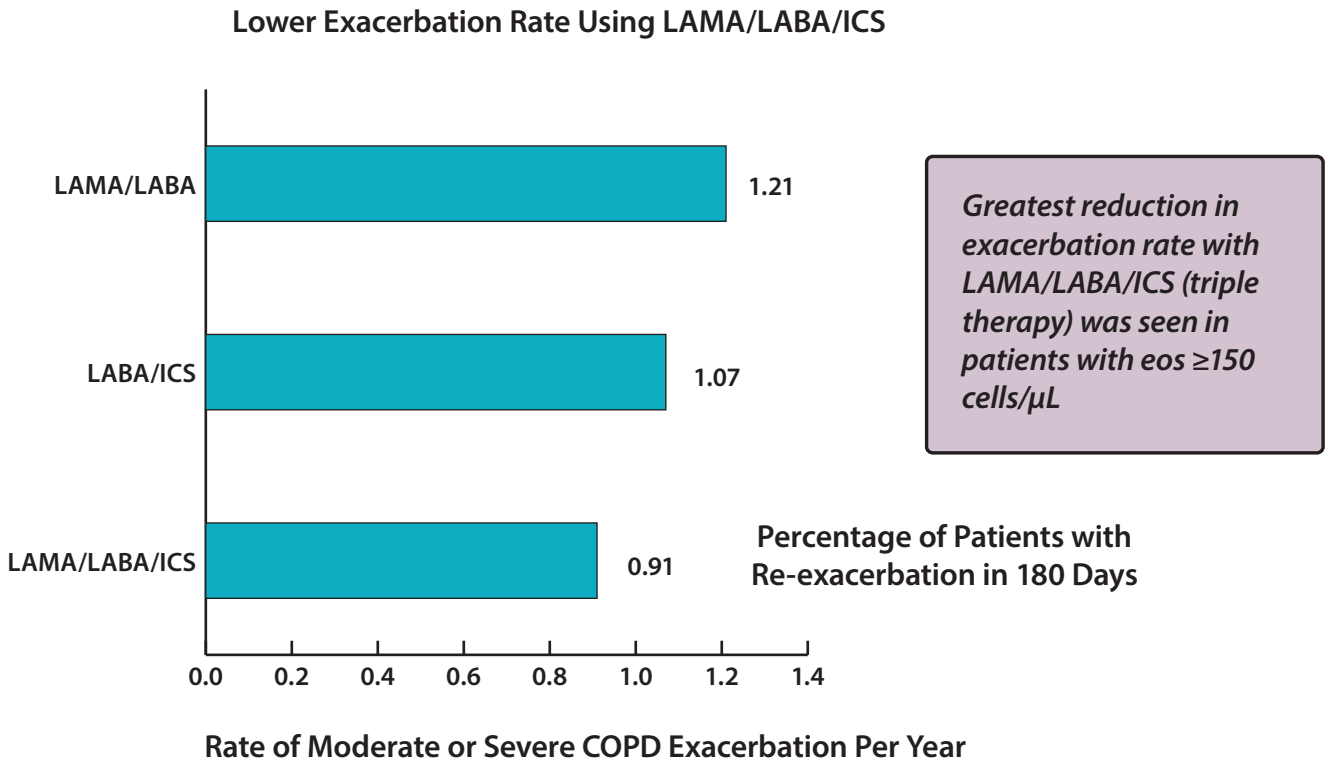
ICS inhalers have adverse effects which need to be considered and discussed before prescribing. ICS adverse effects include:[9,40–42]

- Oral candidiasis
- Hoarse voice
- Skin bruising
- Pneumonia

Patients at highest risk of pneumonia related to ICS include patients:

- Who smoke
- Are >55 years of age
- Have a history of pneumonia
- Have a body mass index <25 kg/m^2
- Have severe airflow limitation

Figure 12. Triple Therapy Versus Dual Therapy in Patients with Grade C or D COPD[37]



IMPACT trial evaluated the use of LAMA/LABA, LABA/ICS, and LAMA/LABA/ICS (single inhaler triple combination) in patients with COPD. LAMA/LABA/ICS had the lowest rate of exacerbations at 0.91/year ($p< 0.001$). In a sub-group analysis, patients with an eos ≥150 cells/µL showed the greatest reduction in exacerbation rates using LAMA/LABA/ICS. LAMA/LABA = umeclidinium (LAMA)/ vilanterol (LABA); LABA/ICS = vilanterol (LABA)/fluticasone furoate (ICS); LAMA/LABA/ICS = umeclidinium (LAMA)/vilanterol (LABA)/fluticasone furoate (ICS).

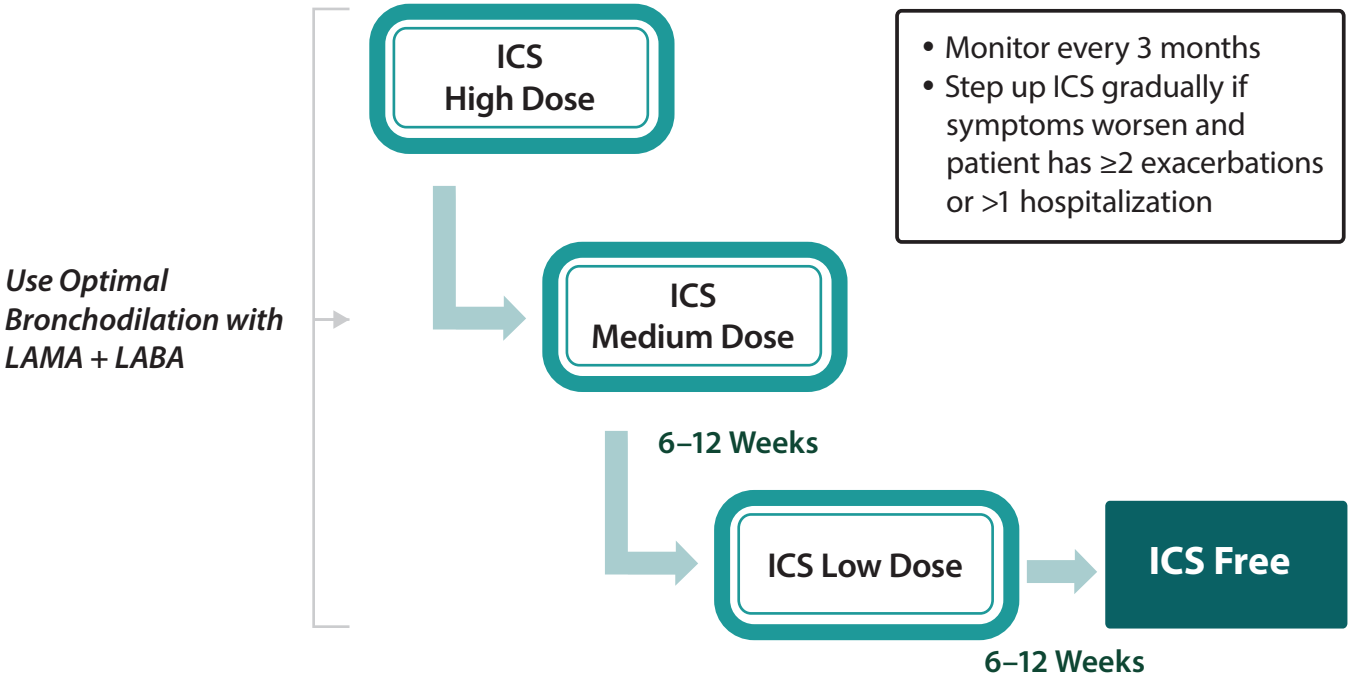
Withdrawal of Inhaled Corticosteroids

Corticosteroid inhalers may need to be discontinued. The dose should be slowly tapered to avoid worsening of symptoms. Caution should be used when withdrawing ICS in patients with blood eos ≥300 cells/µL due to a higher risk of experiencing more exacerbations after stopping ICS.[9,40–42]

Possible candidates for ICS discontinuation include patients with:[9]

- Pneumonia
- Inappropriate original indication for ICS
- Lack of response to ICS
- Stable COPD without exacerbation in past year

Figure 13. Tapering Inhaled Corticosteroids[43–44]



When Inhalers are not Enough

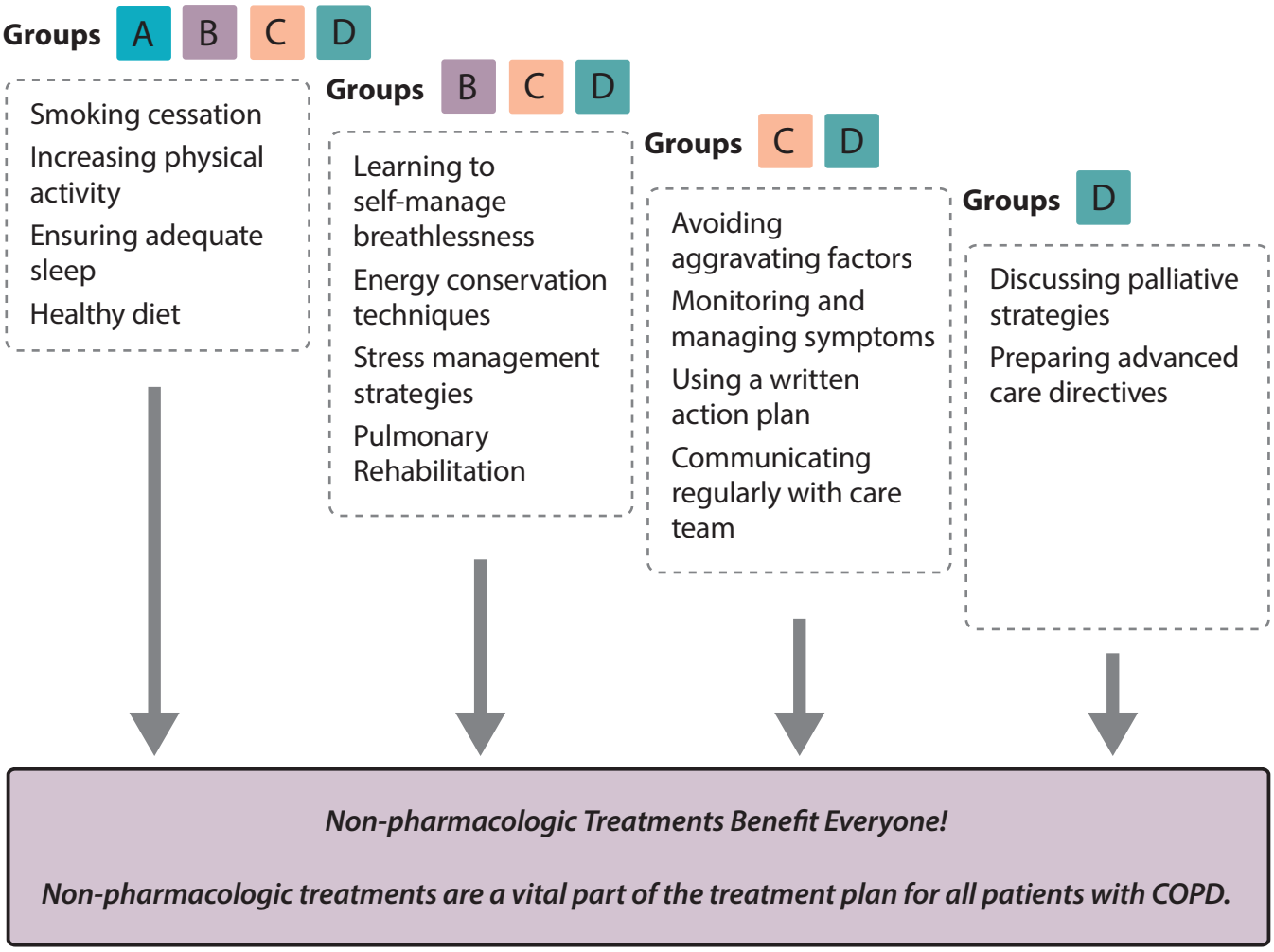
In patients with continued exacerbations despite maximizing inhaler therapy, a referral to a pulmonologist is recommended. Roflumilast or azithromycin may be indicated.[9]

Table 4. Options for Group D Patients on LABA + LAMA +/- ICS who Still Have Exacerbations[9,45–47]

Roflumilast*	Macrolide Antibiotic
Indicated for patients with FEV <50% with >1 recorded exacerbation requiring systemic steroids, unscheduled healthcare contact, or hospitalization in the previous year.	Azithromycin is the macrolide of choice for this indication. Best evidence is for use in patients who are former smokers. May reduce exacerbation rates in some patients.
Patients should be on optimal bronchodilatory therapy (LAMA + LABA) +/- ICS. Prescribing should be done by a pulmonologist or designated expert.	Patients should be on optimal bronchodilatory therapy (LAMA + LABA) +/- ICS. Prescribing should be done by a pulmonologist or designated expert.
Avoid use in patients with depression; may increase risk of suicide. Contraindicated in patients with moderate to severe liver impairment.	Associated with an increased incidence of bacterial resistance, prolongation of QTc interval, and impaired hearing tests.
Roflumilast 500 mg tablet orally once daily; may initiate at 250 mg daily for 4 weeks to reduce adverse effects.	Azithromycin 250 mg orally once daily or 500mg three times weekly.

*Criteria for use of roflumilast is available at **https://www.pbm.va.gov/**; see ADS COPD Quick Reference Guide for more detailed medication information.

Figure 14. Non-pharmacologic Treatments Recommended by Group Classification[9,48,49]

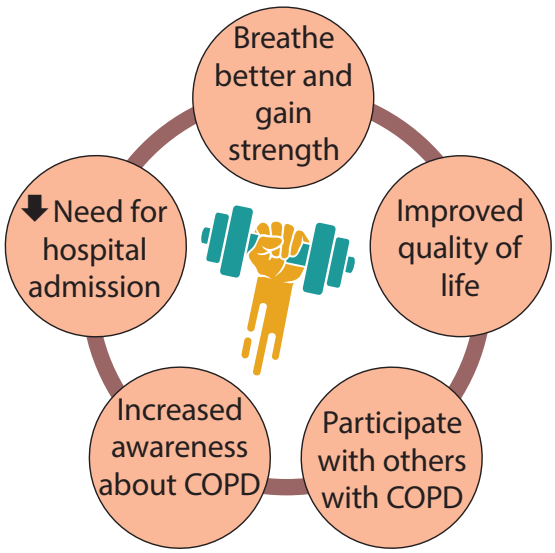


Pulmonary Rehabilitation

Pulmonary rehabilitation is an evidence-based, multidisciplinary intervention for patients with chronic respiratory disease who are symptomatic and have a reduction in daily life activities.[9,12,50,51]

Pulmonary Rehabilitation:

- Reduces symptoms, optimizes functional status, increases participation, and reduces healthcare costs through stabilizing or reversing systemic manifestations of the disease.

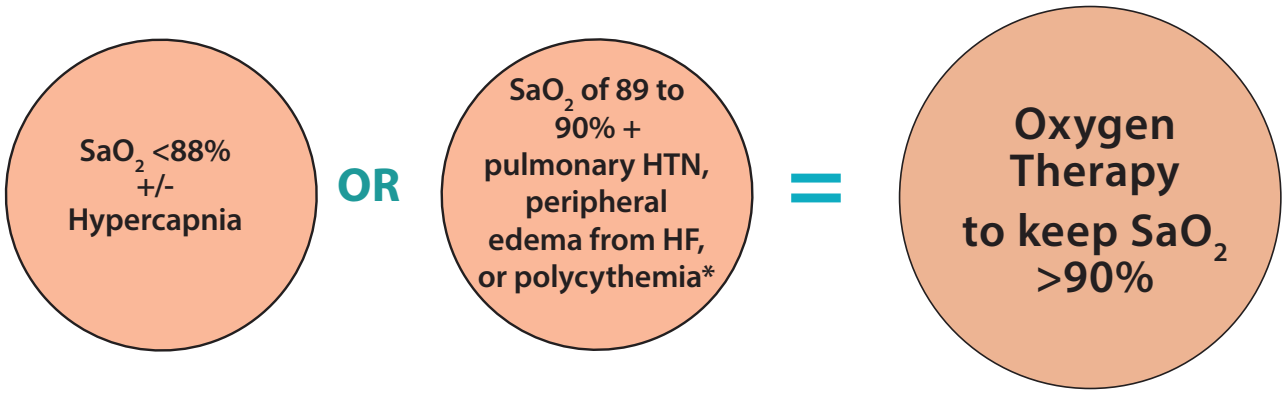


- May benefit patients with COPD groups B, C, and D[9]
- Should be provided at diagnosis, at discharge after hospitalization for an exacerbation, or when symptoms are progressively deteriorating[9]. Check with your local facility about the referral process for Pulmonary Rehabilitation.

Oxygen Therapy

Using supplemental oxygen long-term (>15 hours a day) increases survival in patients with chronic respiratory failure and severe chronic resting hypoxemia.[52] **In patients with stable COPD and moderate resting or exercise-induced arterial desaturation, however, long-term oxygen does not prolong survival or time to first hospitalization or provide sustained benefit in health status, lung function, or 6-minute walk distance.**[53]

Figure 15. Oxygen is Indicated When Oxygen Saturation (SaO_2) Falls Below 88%[9,12]



CHF = congestive heart failure; HTN = hypertension; SaO_2 = Oxygen saturation. *Polycythemia defined as hematocrit >55%.

Recheck SaO_2 60 to 90 days after starting oxygen therapy to decide if:

- Supplemental oxygen is still indicated
- Prescribed supplemental oxygen is effective

Acute Exacerbations

A COPD exacerbation is defined as an acute worsening of respiratory symptoms that requires additional therapy. This section will focus on medication management and will not include non-invasive or invasive ventilation techniques for severe exacerbations of COPD.

Exacerbations can be classified as:[6,9,12]

- Mild – treated with short-acting bronchodilators only
- Moderate – treated with short-acting bronchodilators plus antibiotics and/or oral corticosteroids
- Severe – requires hospitalization or visit to the emergency department

The most common causes of exacerbations are respiratory tract infections. Long-term prognosis following hospitalization for COPD exacerbation is poor with a 5-year mortality rate of about 50%.[54–57]

Figure 16. Factors Associated with Poor Outcome After an Exacerbation[54–57]

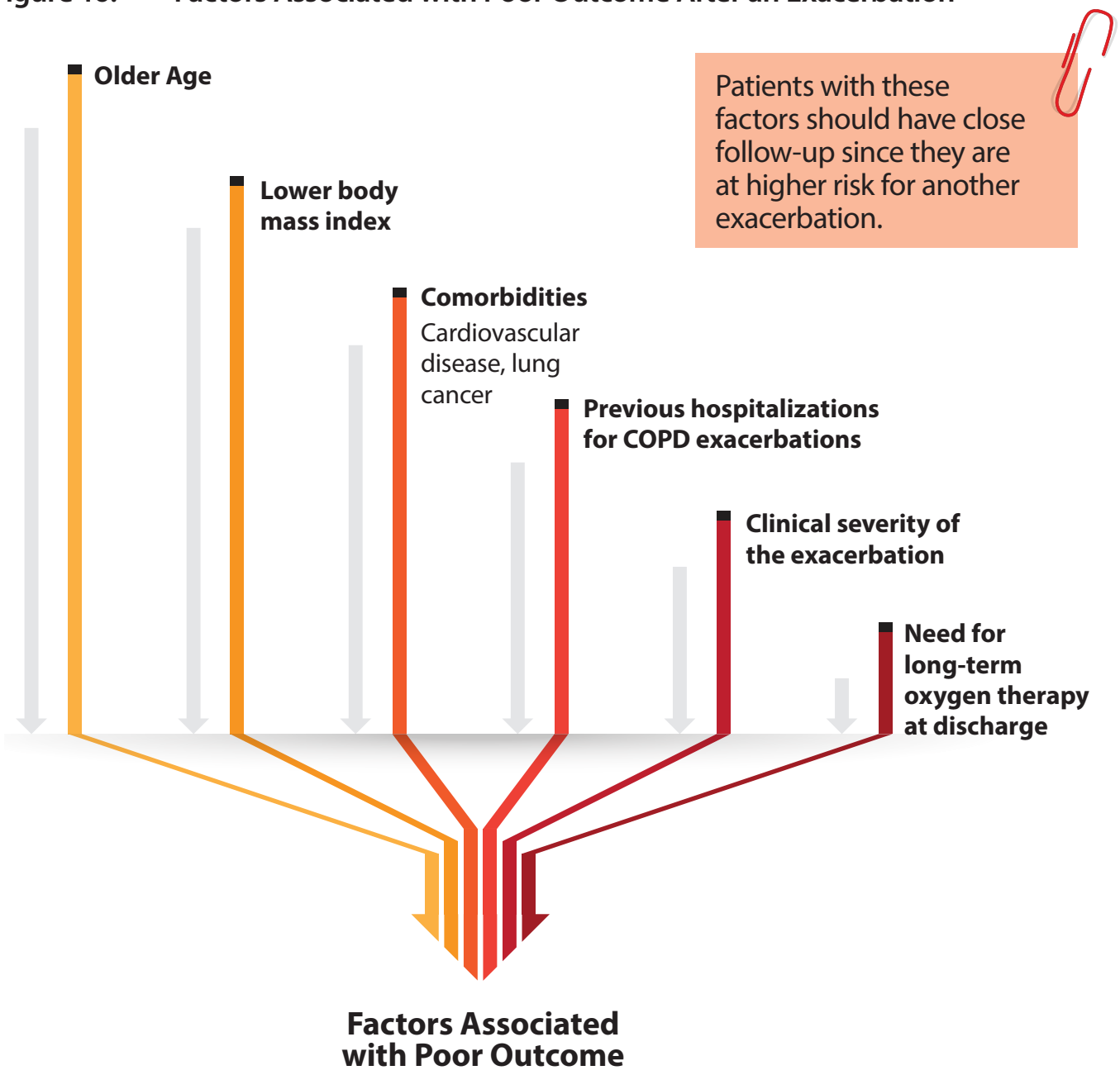
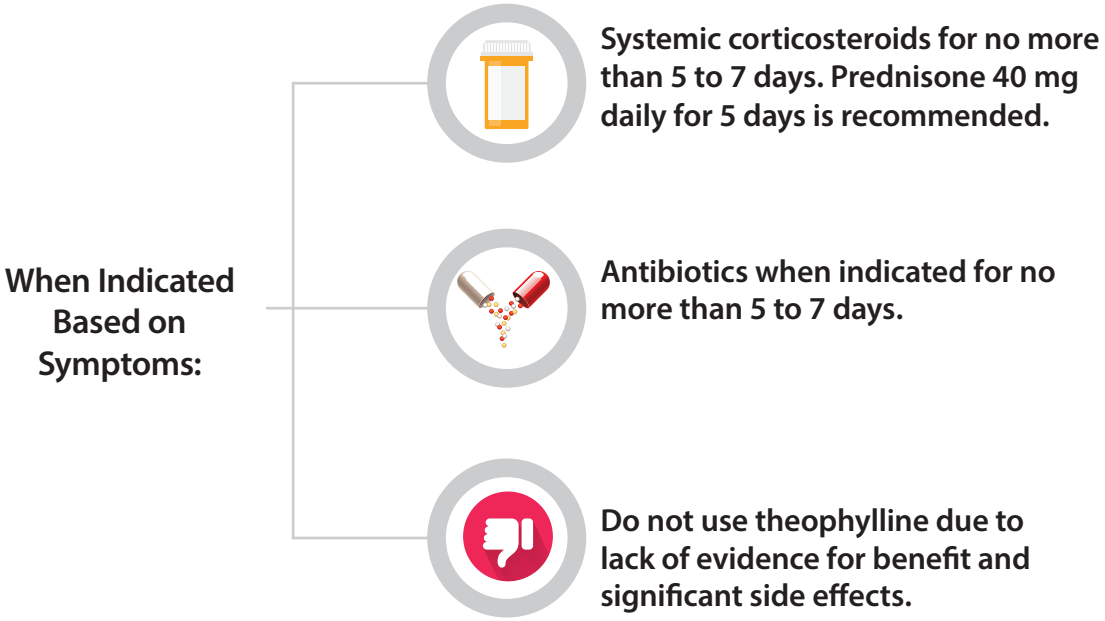


Figure 17. Recommended Approach to Managing COPD Exacerbations[6,9,54–57]



All Patients:

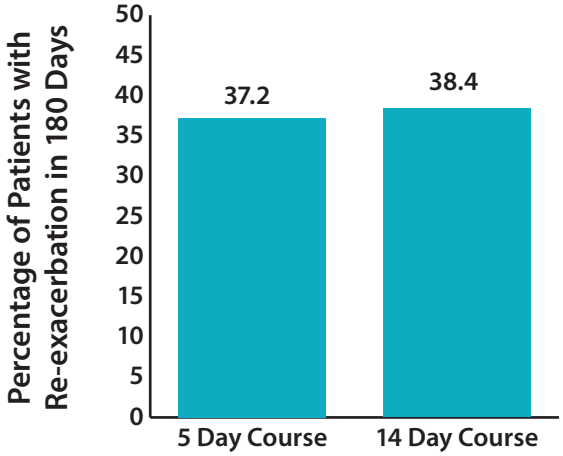
Short-acting inhaled beta2-agonist (SABA) with or without short-acting muscarinic antagonist (SAMA).

Continue long-acting bronchodilators.

Oral Steroid Use[56,57]

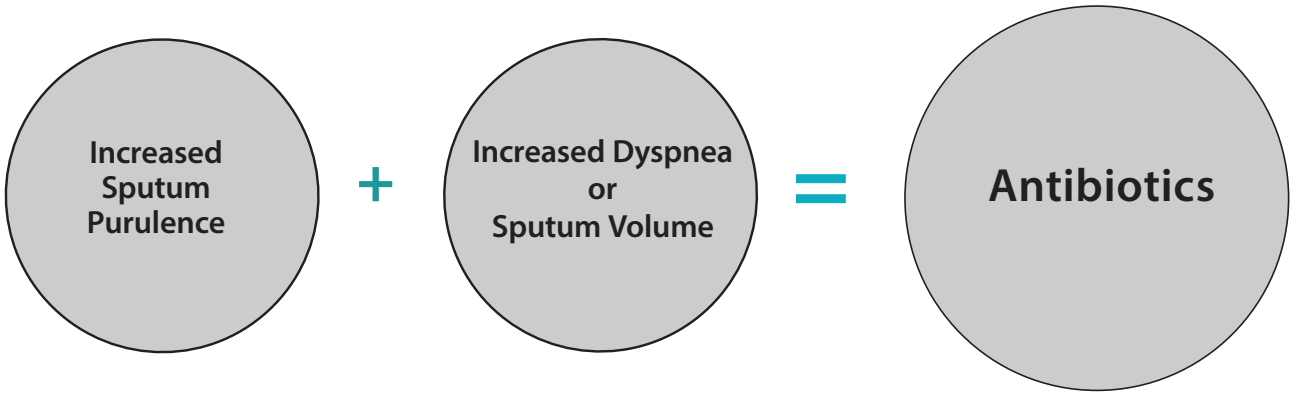
- Typical oral steroid regimen is prednisone 40 mg orally daily for 5 days.
- Steroid use >5 days was not shown to improve outcomes and will increase side effects.
- Use for patients with a poor response to bronchodilators.
- Prednisone does not need to be tapered when using a 5-day course.

Figure 18. Re-exacerbation Rates are Similar Using Prednisone for 5 Days Compared to 14 Days[56]



Antibiotics are indicated when there is an increase in sputum purulence along with increased dyspnea or an increase in sputum volume.

Figure 19. When to Use Antibiotics[7,9,12]

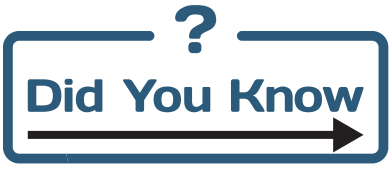


Choice of antibiotic should be based on local resistance patterns, but empirical therapy is usually amoxicillin + clavulanic acid, macrolide (e.g., azithromycin), or second generation cephalosporin (e.g., cefuroxime).

Treat an exacerbation with short-acting beta-agonist(s), continue long-acting bronchodilator(s), and give short courses of oral corticosteroids (5-days) and antibiotics (5–7 days) when indicated.

Figure 20. Interventions that May Reduce the Frequency of COPD Exacerbations[9]

Long-acting Bronchodilators	Corticosteroid-containing Regimens	Anti-inflammatory (non-steroid)	Anti-infectives	Non-pharmacologic
LAMA LABA LAMA + LABA	LABA + ICS LAMA + LABA + ICS	Roflumilast	Vaccines Long-term Macrolides	Smoking Cessation Pulmonary Rehabilitation

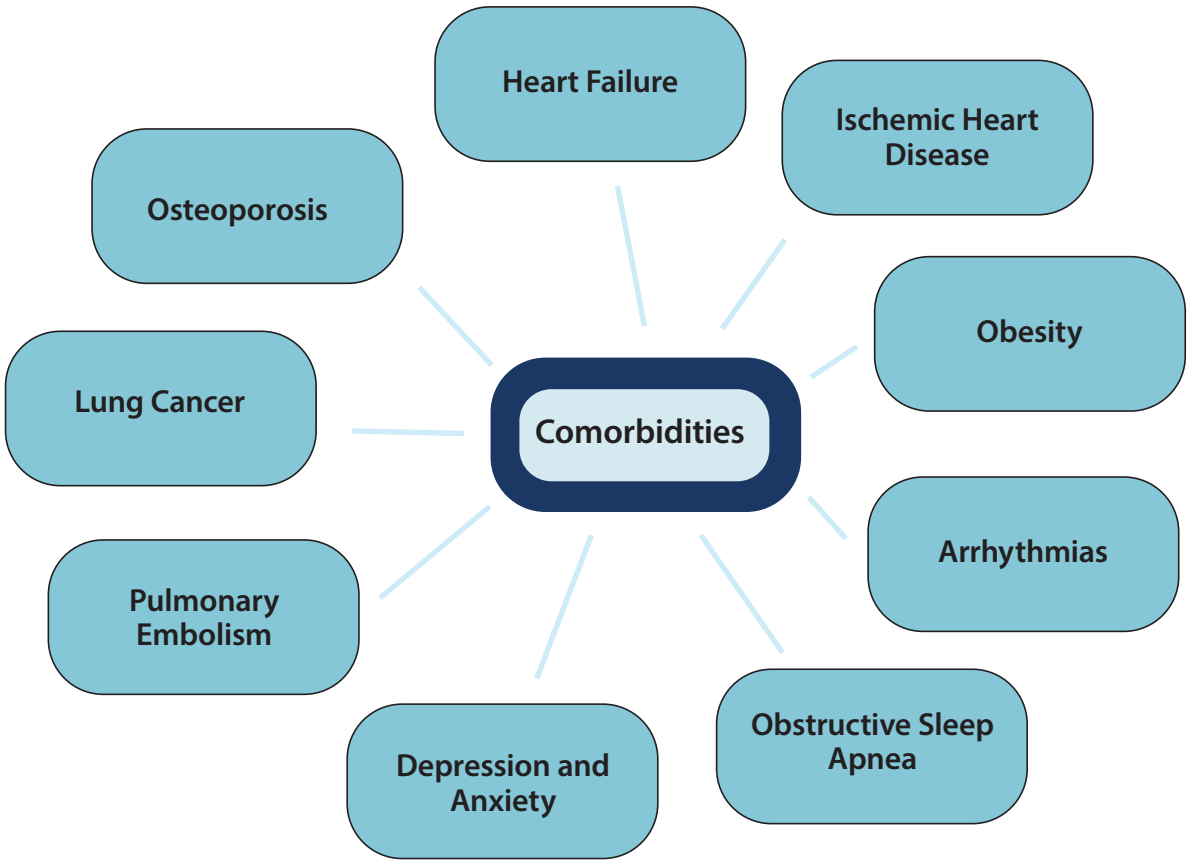


In the VA COPD CARE Service Project, having a clinical pharmacy specialist and a registered nurse involved in seeing patients after hospital discharge for a COPD exacerbation resulted in 0% of patients being readmitted to the hospital or emergency department with a COPD exacerbation at 30-days post discharge.[58]

Treating Other Comorbidities

Treating comorbidities is very important for optimal management of COPD. Conditions that are of greatest concern:[9]

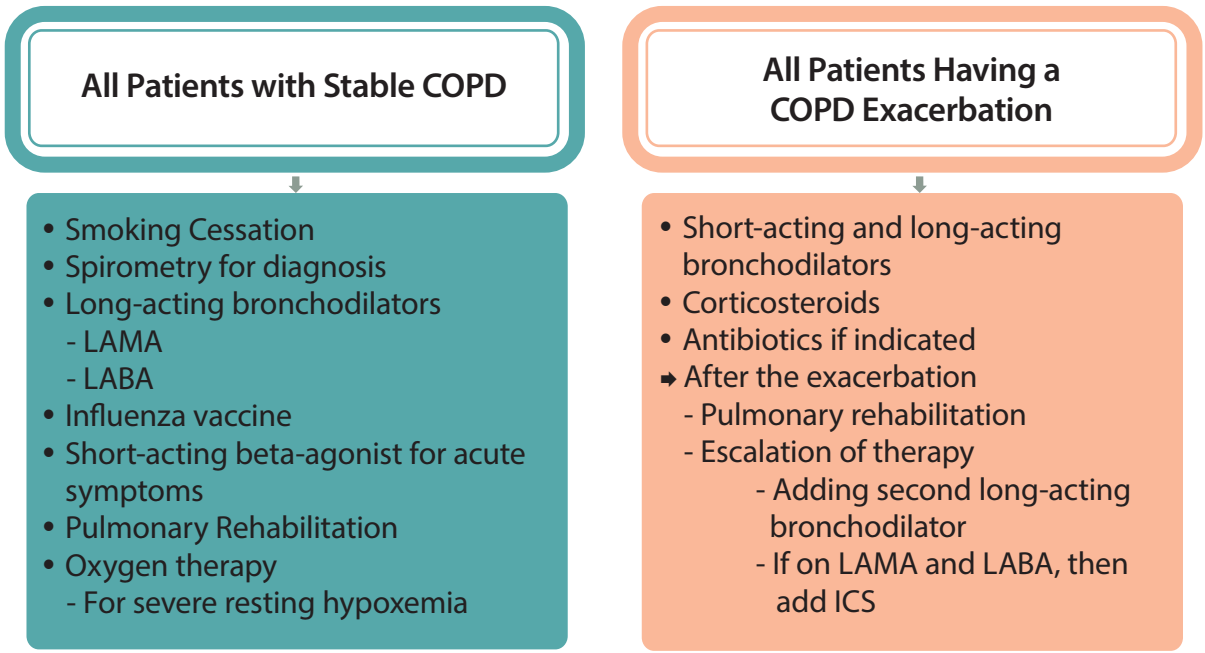
Figure 21. Important Comorbidities to Treat for Optimal COPD Management

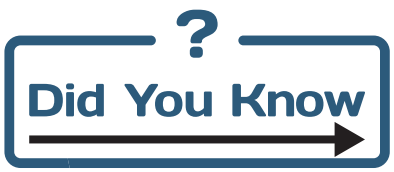


Summary of Treatment Approaches

Prevention and treatment of exacerbations involves many different types of pharmacologic and non-pharmacologic treatments. Ensuring that all patients diagnosed with COPD receive the recommended treatments will help reduce exacerbations and hospitalizations. When a Veteran does have a COPD exacerbation, providing evidence based treatments can reduce the rates of future exacerbations and readmissions. A summary of the recommendations are listed below.

Figure 22. Review of the Recommendations for Patients with Stable COPD and Those with COPD Exacerbations





Therapies that May be Overused:

- *Oxygen in non-severe resting hypoxemia, especially after an exacerbation*
- *Inhaled corticosteroids (ICS)*
- *Antibiotics in treatment of exacerbations*

Appendix A

Your name:_____

Today's date:_____

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional to measure the impact that COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers and test score can be used by you and your healthcare professional to help improve the management of your COPD and gain the greatest benefit from the treatment.

For each item below, place a mark (X) in the box that best describes your current situation. Please ensure that you only select one response for each question.

Example: I am very happy | 0 | X | 1 | 2 | 3 | 4 | 5 | I am very sad

			SCORE
I never cough	0 1 2 3 4 5	I cough all the time	
I have no phlegm (mucus) on my chest at all	0 1 2 3 4 5	My chest is full of phlegm (mucus)	
My chest does not feel tight at all	0 1 2 3 4 5	My chest feels very tight	
When I walk up a hill or a flight of stairs I am not out of breath	0 1 2 3 4 5	When I walk up a hill or a flight of stairs I am completely out of breath	
I am not limited to doing any activities at home	0 1 2 3 4 5	I am completely limited to doing all activities at home	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	I am not confident leaving my home at all because of my lung condition	
I sleep soundly	0 1 2 3 4 5	I do not sleep soundly because of my lung condition	
I have lots of energy	0 1 2 3 4 5	I have no energy at all	

TOTAL SCORE

A COPD assessment test was developed by an interdisciplinary group of international COPD experts with support from GSK. GSK's activities in connection with the COPD assessment test are monitored by a supervisory council that includes external, independent experts, one of which is chair of the council.

Appendix B

Modified Medical Research Council Breathlessness Scale

Grade	Description of Breathlessness
0	I only get breathless with strenuous exercise
1	I get short of breath when hurrying on level ground or walking up a slight hill
2	On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace
3	I stop for breath after walking about 100 yards or after a few minutes on level ground
4	I am too breathless to leave the house or I am breathless when dressing

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