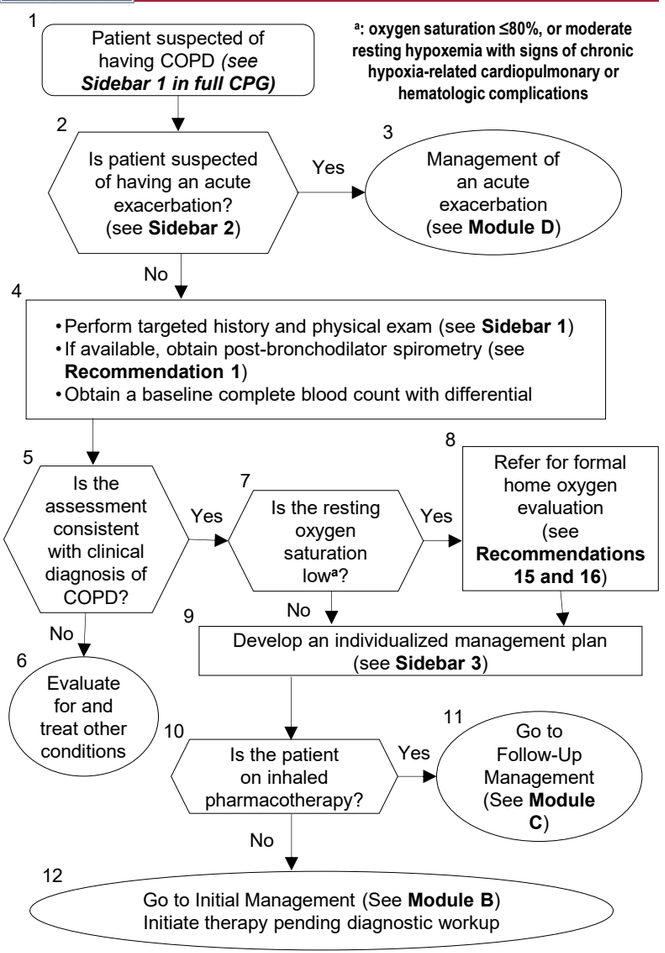
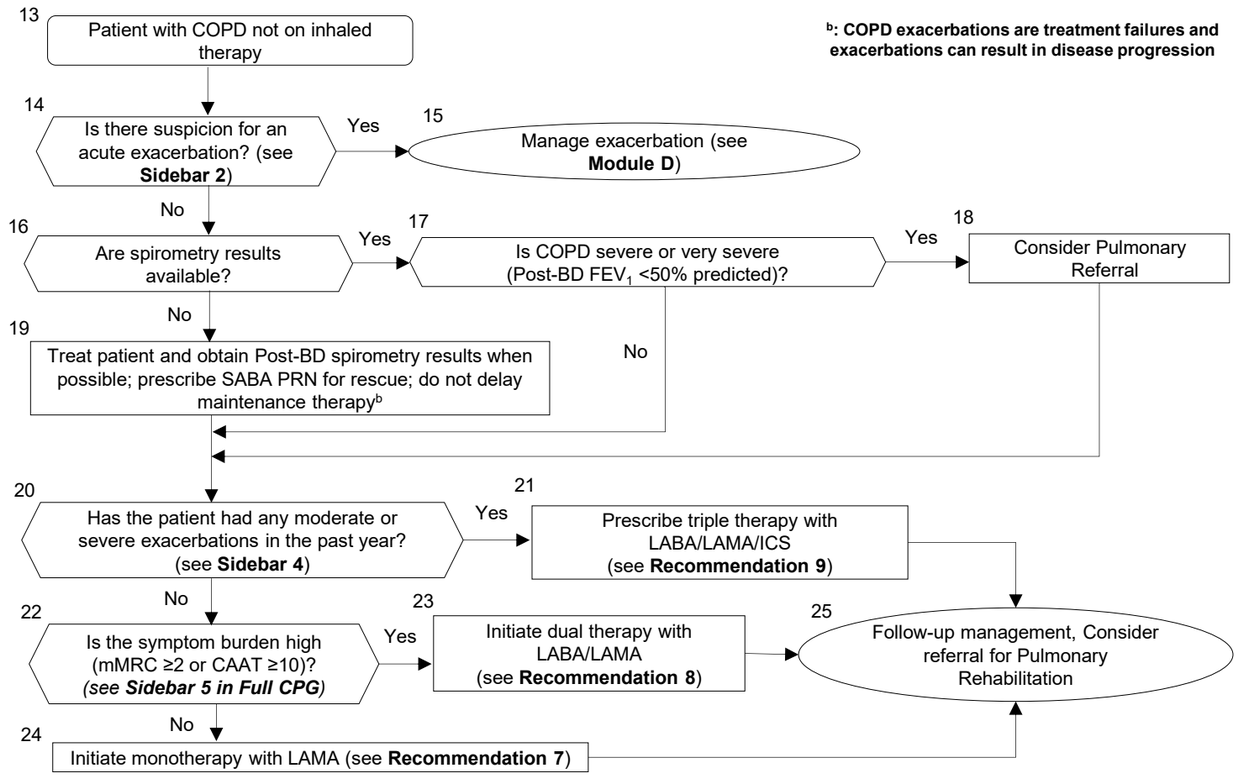
FOR THE MANAGEMENT OF COPD

Module A: Assessment of COPD



Abbreviations: COPD: chronic obstructive pulmonary disease

Module B: Initiation of Therapy



Abbreviations: BD: bronchodilator; CAAT: COPD Airways Assessment Test; COPD: chronic obstructive pulmonary disease; FEV1: forced expiratory volume in 1 second; ICS: inhaled corticosteroid; LABA: long-acting beta-agonist; LAMA: long-acting muscarinic antagonist; mMRC: Modified Medical Research Council Dyspnea Scale; PRN: pro re nata

Sidebar 2: When to Suspect an Acute COPD Exacerbation

Increased respiratory symptoms (i.e., increased shortness of breath, increased sputum volume, and/or sputum purulence — a change in sputum color from the patient's usual clear or white baseline to yellow or green) over a few days (<2 weeks) beyond the usual day-to-day variability and not fully explained by other differential diagnoses (e.g., heart failure, pulmonary emboli, pneumonia, etc.)

Abbreviations: COPD: chronic obstructive pulmonary disease

Sidebar 3: Individualized Management Plan

Assess symptom burden with a Patient-Reported Outcome Measure – CAAT and/or mMRC

Assessment and management of modifiable risk factors

- Tobacco smoking and cessation (see **Recommendations 4 and 5** and **VA/DOD Tobacco Use Treatment CPG**)
- Vaccination (see **Recommendation 6**)
- Nutrition (malnutrition)
- Activity/Exercise
- Mental health
- Substance use including alcohol
- Air Quality
- Housing insecurity

Additional management considerations

- Management of co-occurring conditions that may worsen COPD (see **CPG pg. 8**)
- Oxygen therapy (see **Recommendations 15 and 16**)
- Refer for in-person or tele-pulmonary rehabilitation (see **Recommendations 17-18**)
- Telehealth support (see **Recommendation 19**)
- Palliative Care
- Pharmacological management (see **Module B and Module C**)
- Patient and/or caregiver education and support (for example see **Background F**; refer to Veterans Health Library)

Abbreviations: CAAT: COPD Airways Assessment Test; COPD: chronic obstructive pulmonary disease; CPG: clinical practice guideline; DOD: Department of Defense; mMRC: Modified Medical Research Council Dyspnea Scale; VA: Department of Veterans Affairs

Sidebar 4: Severity of Prior Acute COPD Exacerbations

History of acute exacerbation of COPD within the last year treated in the following manner:

- History of Mild Exacerbation: Symptoms managed with inhaled bronchodilators alone. (**See Algorithm Box 42**)
- History of Moderate Exacerbation: Treatment included systemic corticosteroids and/or antibiotics. (**See Algorithm Box 43**)
- History of Severe Exacerbation: Management required hospitalization or emergency room visit. Severe exacerbations may also require additional ventilatory support including non-invasive ventilation or mechanical ventilator support. (**See Algorithm Box 40**)

Abbreviations: COPD: chronic obstructive pulmonary disease

Module C: Follow Up Management of COPD

26 Patient with COPD already on maintenance therapy[c]; ensure patient is prescribed SABA as needed and ensure proper inhaler technique/adherence

27 Is there suspicion for an acute exacerbation? (see **Sidebar 2**)
- Yes → 28 Manage exacerbation (see **Module D**)
- No →

29 Has the patient had any moderate or severe exacerbations in the past year? (see **Sidebar 4**)
- Yes → 30 Is patient already on triple therapy (LABA/LAMA/ICS)?
  - Yes → 31 Consider Pulmonary Referral for advanced therapy → 33 Continue follow-up and reassessment (as above)
  - No → 32 Initiate triple therapy with LABA/LAMA/ICS (see **Recommendation 9**) → 33 Continue follow-up and reassessment (as above)
- No →

34 Are symptoms still bothersome?
- Yes → 35
  - If on monotherapy, advance to LABA/LAMA
  - If on LABA/LAMA, consider pulmonary referral for advanced therapy
  - Re-evaluate the need for supplemental oxygen therapy (see **Recommendations 15 and 16**)
  - Consider pulmonary rehabilitation (see **Recommendations 17 and 18**)
- No →

36 Does the therapy include an ICS?
- No → 37
- Yes →

37 Consider ICS discontinuation trial if:
a) no exacerbations in the last year AND
b) low blood eosinophils (<300 cells/mcL) (see **Recommendation 11**)

[c]: Stable patients on ICS/LABA, should be switched to either LABA/LAMA or triple therapy based on moderate/severe exacerbations and EOS ≥ 300 (see Recommendation 8 and 9 narratives for details)

Abbreviations: COPD: chronic obstructive pulmonary disease; ICS: inhaled corticosteroid; LABA: long-acting beta-agonist; LAMA: long-acting muscarinic antagonist; mcL: microliter; SABA: short-acting beta-agonist

Module D: Management of Acute COPD Exacerbations

38 Suspected COPD exacerbation (see **Sidebar 2**)
Note: rule out other etiologies (e.g., heart failure, pulmonary emboli, pneumonia, etc.); Ensure proper inhaler technique/adherence

39 Is patient appropriate for outpatient management? (see **Sidebar 6**)
- No → 40 Severe Exacerbation (requires ED and/or hospitalization):
  - Pre-treat with bronchodilators and oxygen as available and clinically indicated
  - Arrange for transfer
  - Arrange for follow-up and consider referral to pulmonary specialist and pulmonary rehabilitation; consider medication adjustments and vaccination record
- Yes →

41 Does the patient have an acute exacerbation and one or more of the following characteristics present?
- Significant dyspnea (≥ 5 on scale of 0 [none] to 10 [worst dyspnea ever])
- Purulent sputum
- Respiratory rate ≥ 24 breaths/minute
- Increased work of breathing
- Resting pulse oxygen saturation below baseline
- Heart rate ≥ 95 beats/minute

- No → 42 Mild exacerbation: Augment/start short-acting bronchodilators (see **Sidebar 7A**) → 45
- Yes →

43 Moderate Exacerbation: Augment/start short-acting bronchodilators & Initiate a 5-day course of systemic corticosteroids (see **Recommendation 13; Sidebar 7B**)

44 Are two or three of the following symptoms present?
- Increased dyspnea
- Increased sputum volume
- Sputum purulence

- No → 45 Follow-up plan, including home oxygen assessment; consider pulmonary referral and pulmonary rehabilitation; consider medication adjustments and vaccinations
- Yes →

46 Initiate antibiotics (see **Recommendation 14; Sidebar 7C**) → 45

Abbreviations: COPD: chronic obstructive pulmonary disease; ED: emergency department

Recommendations can be accessed in the full guideline.
Available at: https://www.healthquality.va.gov/.

Sidebar 6: Criteria for Possible Admission to ED, Hospital, or ICU*

- In the opinion of the evaluating healthcare professional, inpatient or emergency department management is warranted
- Accessory muscle use or retractions
- Severe tachypnea or respiratory distress
- Acute, aberrant vitals (e.g., hypotension, severe tachycardia, etc.)
- Failure to respond to initial outpatient therapy
- Hypoxemia or hypercapnia compared to baseline
- Inability to complete ADLs due to acute symptoms
- Inability to take oral medications
- Altered mental status
- Presence of severe underlying COPD and/or serious co-occurring medical conditions

***Use clinical judgement. Abbreviations**: ADLs: activities of daily living; ED: emergency department; ICU: intensive care unit

Sidebar 7: Pharmacologic Treatment of Acute COPD Exacerbations in Outpatients

7a. Adjust bronchodilator therapy
- Augment (consider scheduling for a few days) short - acting bronchodilator therapy with SABA (e.g., albuterol, levalbuterol), then change back to as needed ***and***
- Start or change maintenance inhalers to triple therapy with ICS/LABA/LAMA (Boxes 21 & 30) [do NOT use maintenance inhalers for relief of acute symptoms and do NOT use more than usual dose approved by the FDA]

7b. Systemic corticosteroids (see **Recommendation 13**)
- Start a short course of prednisone 40 mg daily or equivalent (recommended duration is 5 days but may extend to 14 days as clinically indicated).

7c. Antibiotics (see **Recommendation 14**)
- Start a short (3-10 days) course of an antibiotic: choice based on local resistance patterns and prior patient culture data to cover, at minimum, *S. pneumoniae*, *H. influenzae*, *M. catarrhalis*
- Consider adding coverage for *Pseudomonas* and other Gram-negative rods if Post–BD FEV_1 <50% predicted, recent antibiotic use, recent or frequent hospitalizations, or history of infection or colonization with resistant organisms

Abbreviations: BD: bronchodilator; COPD: chronic obstructive pulmonary disease; FEV1: forced expiratory volume in 1 second; ICS: inhaled corticosteroid; LABA: long-acting beta 2-agonist; LAMA: long-acting muscarinic antagonist; mg: milligram; SABA: short-acting beta 2-agonist