Disease Management: COPD

Diagnosis:

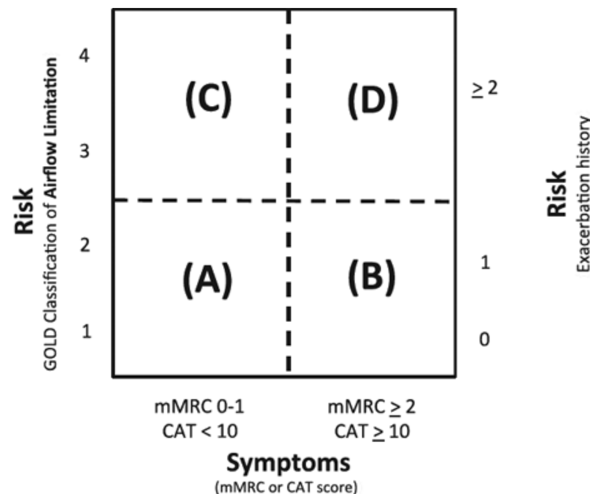
- Consider COPD if persistent dyspnea, chronic cough, chronic sputum production, exposure to risk factors (tobacco smoke, occupational dusts and chemical), family history of COPD
- Inform provider and suggest spirometry

GOLD Stage 1: Mild	FEV1/FVC <.70	FEV1 > 80% predicted
GOLD Stage 2: Moderate	FEV1/FVC <.70	50% < FEV1 < 80% predicted
GOLD Stage 3: Severe	FEV1/FVC <.70	30% < FEV1 < 50% predicted
GOLD Stage 4: Very Severe	FEV1/FVC <.70	FEV1 < 30% predicted

Assess risk/symptoms:

- The best predictor of having frequent exacerbations (2 or more per year) is a history of previous treated events. The risk of exacerbations also increases as airflow limitation worsens. Hospitalization for a COPD exacerbation is associated with a poor prognosis with and increased risk of death. Evidence of exacerbation may include:
    - Increased dyspnea
    - Increased heart rate
    - Increased cough
    - Increased sputum production
    - Change in sputum color or character
    - Use of accessory muscles for respiration
    - Peripheral edema
    - Development or increase in wheezing
    - Change in mental status
    - Fatigue
    - Fever
    - Increased respiratory rate
    - Decrease in FEV1 or PEF
    - Hypoxemia
    - Chest tightness
    - Severe: Change in mental status
    - Severe: Cyanosis
    - Severe: Respiratory rate >25 /min
    - Severe: Heart rate >110/min
- Assess symptoms using a validated questionnaire; the COPD Assessment Test (CAT) available at www.catestonline.org or the Modified British Medical Research Council (mMRC) breathlessness scale below.

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 or undressing.



Maintain treatment goals:

- Smoking cessation
  Ask about tobacco use/exposure at every visit and offer cessation support as needed.

- Oxygen use
  Ask about use of oxygen and/or CPAP as prescribed. Refer to respiratory therapy if needed. Oxygen can be titrated to the specific needs of the patient during rehab sessions to maintain an oxyhemoglobin saturation above 90%.

- Air quality
  Ask about exposure to indoor/outdoor air pollution, chemicals, extreme weather, or allergens. Monitor public announcements of air quality and advise avoidance of fumes and allergens.

- Exercise
  Assess physical activity level and encourage regular exercise. Standard exercise-prescription regimens (AACVPR) can be used for most patients. In patients who have exercise limitation primarily due to pulmonary disease, an exercise prescription regimen based on symptom-limited endpoints can be used. Specific upper-body exercises should be included as part of the rehab program and careful attention should be placed on the excess ventilatory response that may be exacerbated.

- Flu and pneumococcal vaccinations

- Medications
  Ask about medication compliance and proper administration. Refer for delivery device instruction as needed. Certain COPD medications such as theophylline or beta-blocker agents may aggravate an underlying cardiac problem, and thus knowledge of the potential side effects of each medication is important. See attachment for first and second choice pharmacologic management based on GOLD rubric.

- Management of comorbidities
  Verify treatment plans for comorbidities. Common comorbidities include CAD, osteoporosis, depression/anxiety, skeletal muscle dysfunction, metabolic syndrome, cancer.

- Attend MD appointments
  Assess for appearing for scheduled MD visits. Suggest pulmonary specialist referral for any of the following:
  - Lung function deficits not consistent with symptoms
  - Rule out other diagnoses
  - Pulmonary function test show mixed (obstructive + restrictive) pattern
  - COPD with < 10 pack-yr smoking history
  - Considering alpha-1 antitrypsin deficiency
  - Patient hospitalized for COPD
  - Frequent respiratory infections of exacerbations
  - Rapid decline in FEV1
  - Consideration of oxygen therapy
  - Patient may be candidate for lung transplant or LVRS
  - Uncomfortable with managing patient alone

- Advance care planning
  Assess advance care planning wishes including palliative care, living will, power of attorney, etc. Refer as needed.

- Breathing and clearance techniques
  Techniques of bronchial hygiene, including bronchial clearance of secretions, and postural drainage are frequently necessary. Pursed-lip breathing and diaphragmatic breathing should be taught and measures of energy conservation should be reviewed.

- Psychosocial
  Psychosocial counseling with particular attention to the patient's underlying COPD may be indicated.

References

Agency for Healthcare Research and Quality: Division of US Dept. of Health and Human Services

American Association of Cardiovascular and Pulmonary Rehabilitation (2004). *Guidelines for cardiac rehabilitation and secondary prevention programs* (4th ed.). Champaign, IL: Human Kinetics.

American Lung Association *COPD Diagnosis and Treatment for Primary Care Providers.* Retrieved from http://www.lung.org/associations/states/minnesota/events-programs/mn-copd-coalition/assets/mn13-diagnosis-treatment.pdf

Global Initiative for COPD: 2013 Guidelines

Institute for Clinical Systems Improvement: COPD Guidelines