SUMMARY

Goals

✓ Increase use of appropriate therapy for COPD patients
✓ Reduce emergency department (ED) visits and hospitalizations
✓ Educate COPD patients to increase their self management skills

Alerts

- COPD with FEV1 < 0.75 L=30% one year mortality
- O2 saturation <90%
- Evaluate and manage hypoxia
- Symptoms of COPD exacerbation: ↑ sputum purulence, ↑ sputum volume, ↑ dyspnea

Diagnostic Criteria/Evaluation

COPD is a slowly progressive disease involving the airways or pulmonary parenchyma (or both) resulting in airflow obstruction that is not fully reversible. Two main causes of airflow obstruction are found, chronic obstructive bronchitis (COB) and emphysema, many people have a component of each.

- Chronic obstructive bronchitis = partially reversible airflow limitation with presence of chronic productive cough for 3 months in each of 2 successive years in a patient where other causes of chronic cough have been excluded.
- Emphysema = an abnormal permanent enlargement of the air spaces distal to the terminal bronchioles, with destruction of their walls and without obvious fibrosis.

How is COPD diagnosed? Diagnosis is suspected based on the patient's symptoms and physical examination. Diagnosis is confirmed when a patient who has symptoms of COPD is found by postbronchodilator spirometry to have FEV1 /FEV ratio less than 0.70.

- CXR is not sensitive for the diagnosis of COPD (it may be done to rule out other diagnoses and as a baseline)
- Screening for Alpha 1-antitrypsin deficiency is recommended in patients who develop COPD at a young age. (GOLD* recommends Caucasian patients under age 45 years or with a strong family history of COPD.)

Stages of COPD Symptoms do not Correlate Directly with Stage. Treatment Based on Symptoms

Gold Stage Mild COPD
FEV1/FVC <70%
FEV1% Predicted: FEV1 ≥ 80%
Symptoms: May have no symptoms, can have cough + sputum, mild dyspnea

Gold Stage Moderate COPD
FEV1/FVC <70%
FEV1% Predicted: 50% ≤ FEV1 <80%
Symptoms: Often have SOB + wheezing on moderate exertion, cough + sputum, can have general reduction in breath sounds, hypoxemia may be present

Gold Stage Severe COPD
FEV1/FVC <70%
FEV1% Predicted: 30% ≤ FEV1 <50%
Symptoms: Dyspnea on exertion (DOE) or dyspnea at rest, wheeze and cough frequent, lung hyperinflation, cyanosis, peripheral edema and polycythemia. Advanced disease: ↓ pO2 and ↑ pCO2 common

Gold Stage Very Severe COPD
FEV1/FVC <70%
FEV1% Predicted: FEV1 < 30% predicted or <50% predicted + (Pao2 < 60mm Hg on room air [RA])
Symptoms: Dyspnea on exertion (DOE) or dyspnea at rest, wheeze and cough frequent, lung hyperinflation, cyanosis, peripheral edema and polycythemia. Advanced disease: ↓ pO2 and ↑ pCO2 common
FEV1 = Forced expiratory volume in 1 sec; FVC = forced vital capacity; PaO2 = arterial partial pressure of oxygen. PaCO2 = arterial pressure of carbon dioxide

*GOLD: Global Initiative for Chronic Obstructive Lung Disease

## Treatment Options for Stable COPD

- Medications For Step –Care Therapy of Stable COPD see page 5
- Short-acting inhaled bronchodilator —> add long-acting bronchodilator —> add inhaled corticosteroids (if >1 exacerbation/yr and severe COPD)
- Steroids: 7-10 day course of oral corticosteroid indicated for treatment of COPD exacerbation. NO role for chronic use of oral corticosteroids. (ICS see above)
- Antibiotics: In outpatient exacerbation antibiotics indicated if > 2 of the following: increase sputum purulence, increase sputum volume, dyspnea
- Pulmonary Rehabilitation: self-directed pulmonary rehabilitation strategies including exercise program/conditioning. Provide education on proper medication use for symptomatic patients with severe COPD (FEV1 < 50%). Education can be considered for symptomatic patients with FEV1 >50%.
- Continuous O2 therapy if severe resting hypoxemia (PaO2 < 55 mm HG or SaO2 < 88%) Goal is baseline PaO2 to > 60 mm Hg or SaO2 >90%

## Monitoring

- Follow-up as clinically indicated. Patients with mild-moderate COPD which is clinically stable may be rechecked every 180 days. Close follow-up is indicated after hospital discharge and after any exacerbation.
- Pneumococcal vaccine and annual influenza vaccine. Ask/advise about tobacco use /exposure at every visit— offer help with smoking cessation.
- Review medication adherence and inhaler technique if patient not responding to therapy.
- Encourage completion of Advance Directive/POLST and establish and document patient’s end of life goals.