

ASSESSING THE SEVERITY OF A COPD EXACERBATION

Assessment of COPD exacerbation severity should be based on the patient's prior medical history, as well as preexisting comorbidities, symptoms, physical examination, arterial blood gas measurements, and other laboratory tests. Specific information is required on the frequency and severity of attacks of breathlessness and cough, sputum volume and color, and limitation of daily activities.¹

Table 1. Assessment of COPD Exacerbations: Medical History and Signs of Severity¹

MEDICAL HISTORY	SIGNS OF SEVERITY
<ul style="list-style-type: none"> Severity of COPD based on the FEV₁ Duration of symptom worsening or the development of new symptoms Number of previous episodes (exacerbations/hospitalizations) Comorbidities Present treatment regimen 	<ul style="list-style-type: none"> Increased dyspnea, chest tightness, occasional wheezing, and increased cough and sputum Use of accessory respiratory muscles Paradoxical chest wall movements Signs of right heart failure Development of peripheral edema Hemodynamic instability Reduced alertness Worsening or new onset of central cyanosis

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DISCHARGE ASSESSMENT

Opportunities for prevention of future exacerbations should be reviewed before discharge, with particular attention to

- Smoking cessation
- Current vaccination (influenza, pneumococcal vaccines)
- Knowledge of current therapy (including inhaler technique)
- How to recognize symptoms of exacerbations

GOLD recommends assessing the following items 4 to 6 weeks after a patient is discharged from the hospital for exacerbations of COPD:

- Ability to cope in their usual environment
- FEV₁ values
- Inhaler technique
- Understanding of their treatment regimen
- For patients with *Stage IV: Very Severe COPD*, the need for long-term oxygen therapy and/or home nebulizer should be considered¹

References: **1.** Global Initiative for Chronic Obstructive Lung Disease (GOLD). *Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease* (Updated 2006). <http://www.goldcopd.org>. Accessed March 5, 2007. **2.** American Thoracic Society/European Respiratory Society Task Force. Standards for the diagnosis and management of patients with COPD (Internet). Version 1.2. New York: American Thoracic Society; 2004 (updated September 8, 2005). <http://www.thoracic.org/sections/copd/resources/copddoc.pdf>. Accessed March 7, 2007.

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Managing Chronic Obstructive
Pulmonary Disease (COPD)

Inpatient Management of Acute Exacerbations



ACUTE COPD EXACERBATIONS

There is no universally accepted definition of acute exacerbation in chronic obstructive pulmonary disease (COPD). The Global Initiative for Chronic Obstructive Lung Disease (GOLD) defines a COPD exacerbation as an acute event characterized by a change in the patient's baseline dyspnea, cough, and/or sputum that is beyond normal day-to-day variations. An exacerbation may warrant a change in the patient's regular medication and, depending on severity, hospitalization.¹

The main symptom of an exacerbation is **increased breathlessness**, and also often includes **wheezing** and **chest tightness**, **increased cough** and **sputum**, **change of color and/or tenacity of sputum**, and **fever**.¹

Other conditions mimic COPD exacerbations and should be excluded. Differential diagnoses include pneumonia, congestive heart failure, myocardial ischemia, upper respiratory tract infection, pulmonary embolism, recurrent aspiration, and noncompliance with medications.^{1,2}

Prevention, early detection, and prompt treatment of exacerbations can minimize the need for hospitalization. Hospital mortality of patients admitted for a COPD exacerbation is approximately 10%, and the long-term outcome is poor. Mortality reaches 40% in 1 year.¹

CRITERIA FOR HOSPITAL ADMISSIONS

The GOLD Guidelines provide a range of criteria to consider for hospital/intensive care unit (ICU) admission for exacerbations of COPD¹:

*Table 2. Indications for Hospital Assessment or Admission for Exacerbations of COPD*¹*

- Symptoms become more intense, such as sudden development of resting dyspnea
- Underlying COPD is severe
- New physical signs such as cyanosis and peripheral edema are evident
- Exacerbation fails to respond to initial medical management
- Comorbidities are significant
- Exacerbations are frequent
- New arrhythmias
- Uncertainty about diagnostic evaluation
- Patient is older
- Home support is insufficient

*Local resources need to be considered.

*Table 3. Indications for ICU Admission of Patients With Exacerbations of COPD*¹*

- Severe dyspnea that does not respond adequately to initial emergency therapy
- A change in mental status (confusion, lethargy, coma)
- Hypoxemia that is persistent or worsens ($\text{PaO}_2 < 5.3 \text{ kPa}$, 40 mm Hg) and/or
- Hypercapnia that is severe or worsens ($\text{PaCO}_2 > 8.0 \text{ kPa}$, 60 mm Hg) and/or
- Respiratory acidosis that is severe or worsens ($\text{pH} < 7.25$) despite supplemental oxygen and noninvasive ventilation
- Invasive mechanical ventilation is needed
- Need for vasopressors because of hemodynamic instability

*Local resources need to be considered.

INPATIENT TREATMENT OF COPD EXACERBATIONS

For a discussion of inpatient treatment options for acute exacerbations of COPD, please refer to the GOLD Executive Summary (updated 2006) in the Guidelines & Resources section of the GOLD Web site at <http://www.goldcopd.org>