# Guiding Principles For COPD Treatment Cheat Sheet

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## Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive, incurable respiratory disorder characterized by airflow obstruction. For health care professionals working in long term care, it's important to understand every aspect of this debilitating disease and follow clear protocols in order to provide effective care.

COPD encompasses emphysema, chronic bronchitis, irreversible asthma, and some forms of bronchiectasis. Cigarette smoking is the main cause of COPD, although air pollution and occupational dusts are also common causes.

About 3 percent of individuals have a genetic form of COPD called Alpha-1 Antitrypsin (ATT) Deficiency. In the beginning stages of the disease, individuals with COPD experience minimal shortness of breath that might be noticed only during exercise. As the disease progresses, shortness of breath worsens and physical activity is diminished. Making a COPD diagnosis relies on a combination of patient history, physical examination, and confirmation of airflow obstruction using a spirometry test.

Credit: http://www.providermagazine.com/archives/2014_Archives/Pages/0714/Guiding-Principles-For-COPD-Treatment.aspx

## Management

Several guidelines for the diagnosis and management of COPD in long term care residents emphasize the need for a multidisciplinary approach. The aim is to treat and prevent chronic symptoms, optimize and preserve activity level, and maximize pulmonary function.

Nonpharmacological interventions include smoking cessation, adequate exercise, healthy diet, and avoidance of secondhand smoke.

Several states and municipalities have enacted 100 percent smoke-free laws for all nursing homes, including common areas and private rooms, in order to protect employees, patients, and visitors from secondhand smoke exposure.

All COPD patients should receive annual influenza vaccine prophylaxis and pneumococcal vaccine administration, as well as pulmonary rehabilitation—an important intervention in patients who have severe exercise limitations.

Pharmacological therapies can improve symptoms, quality of life, and decrease exacerbations. Long-acting bronchodilators are a primary treatment in the majority of patients with mild to moderate disease. Individuals with severe disease and those with a history of recurrent exacerbations may benefit from treatment with inhaled corticosteroids.

## Long term care residents

## Bronchodilators

Inhaled bronchodilators include beta-2 agonists and anticholinergics (antimuscarinics), which are equally effective. These consist of short-acting beta-2 agonists (SABAs) to relax bronchial smooth muscle (albuterol) and long-acting beta-2 agonists (LABAs), which are preferable for individuals with more significant symptoms. Recently, "ultra-long-acting" LABAs have been developed that require once-daily dosing (indacaterol).

Anticholinergics relax bronchial smooth muscle through competitive inhibition of muscarinic receptors (M1, M2, and M3) (ipratropium). A long-acting quaternary anticholinergic, which is M1- and M3-selective (tiotropium), may have an advantage over ipratropium, as M2-receptor blockade may limit bronchodilation.

The frequency of exacerbations can be reduced with the use of anticholinergics, inhaled corticosteroids, or LABAs. The initial choice among SABAs, LABAs, anticholinergics (which have a greater bronchodilating effect), and combination beta-2 agonist and anticholinergic therapy is often a matter decided by a physician.

## Inhaled Corticosteroids

Inhaled corticosteroids (ICSs) inhibit airway inflammation. Their effects are additive to the effect of bronchodilators and diminish the frequency of COPD exacerbations. ICSs are highly effective at controlling asthma, but their effects on pulmonary and systemic inflammation in COPD are unclear. Therefore, their use in COPD is limited to specific indications.

Long-term treatment with ICS is recommended for individuals with severe COPD and frequent exacerbations that are not adequately controlled with long-acting bronchodilators.

Combinations of a LABA (salmeterol or formoterol) and an ICS (fluticasone propionate or budesonide) are more effective than either drug alone in the treatment of stable disease.

## Acute Exacerbations

Treatment of acute COPD exacerbations aims to minimize the impact of the current exacerbation and prevent the development of subsequent exacerbations. The underlying cause of an acute exacerbation is usually unknown, although most acute exacerbations result from bacterial or viral infections. Smoking, irritant inhalation exposure, and high levels of air pollution may also contribute.

Individuals with comorbidities, a history of respiratory failure, or acute changes in arterial blood gas measurements may need hospital treatment. Physicians may determine that individuals with life-threatening exacerbations manifested by uncorrected moderate--to-severe acute hypoxemia, acute respiratory acidosis, new arrhythmias, or deteriorating respiratory function despite hospital treatment should be admitted to the intensive care unit and their respiratory status monitored frequently.

Long term care residents with COPD often fall into a cycle of disability. They become short of breath and lose energy, which has a negative impact on their level of activity. In many cases, patients will avoid exercise and over time experience diminished mental acuity, depression, and a physical decline that, in many cases, can be slowed down.

Prolonged sitting in a wheelchair may cause residents to adopt a flexed spinal posture and posteriorly tilted pelvis. Because these individuals may be unable to physically reposition without considerable assistance, their bodies can be subject to considerable positional strain and immobility, with detrimental physical repercussions, including the formation of pressure ulcers, low back pain, lumbar immobility, and joint stiffness.