

# COPD Management in LTC:

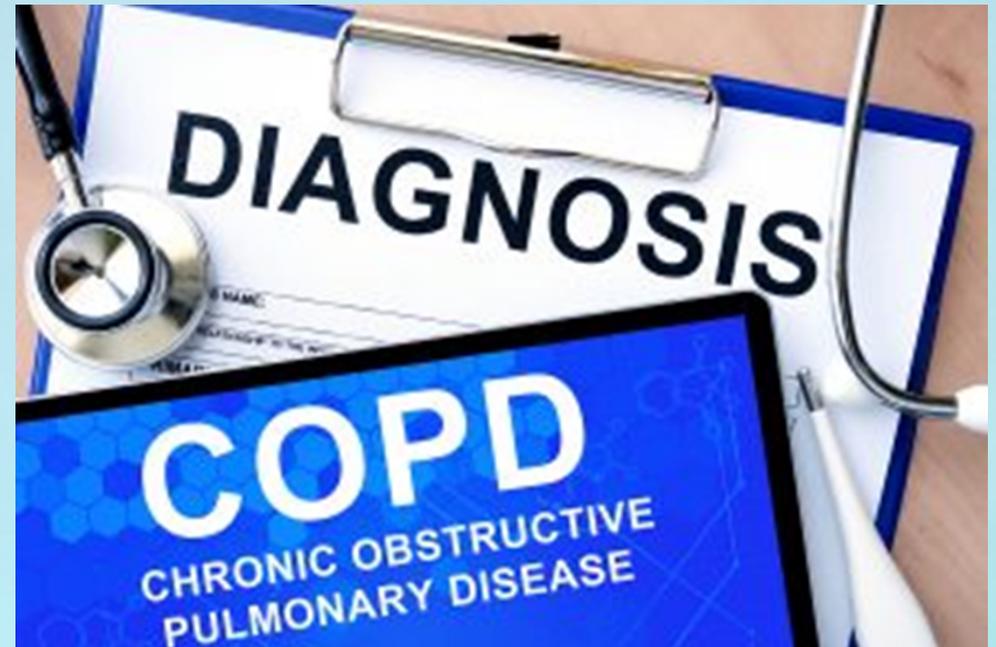
Reducing Symptoms for a  
better Quality of Life!

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# Prevalence of Diagnosed COPD in Nursing Home Residents Is Rising

- Definition and Overview
- Diagnosis and Assessment
- Therapeutic Options
- Manage Stable COPD
- Manage Exacerbations
- Manage Comorbidities



# Applying the Care Process

Following a good care process is critical for COPD management in this setting

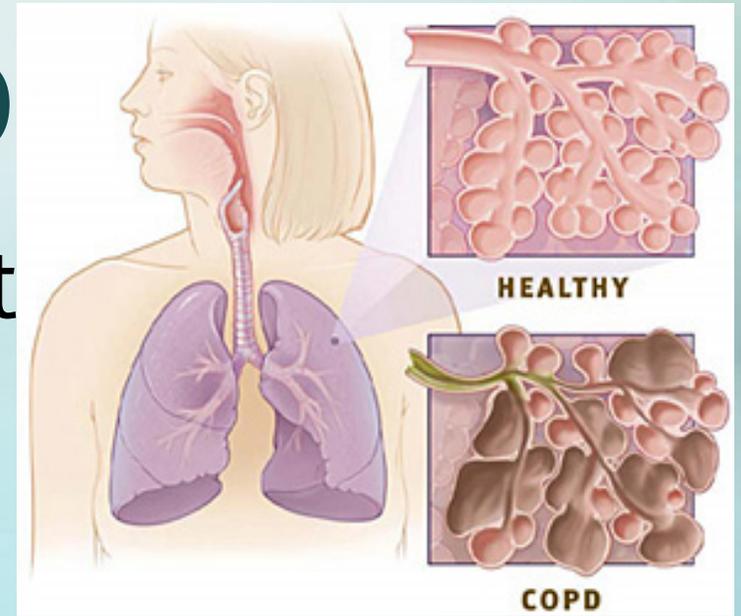
There are four “phases” to a care process

- 1) Recognition
- 2) Assessment/Root cause analysis
- 3) Treatment
- 4) Monitoring

# Impact of COPD

Depends upon severity of symptoms

- Breathlessness
- Decreased exercise capacity
- Systemic effects:
  - muscle wasting, altered nutrition, anemia, increased CAD risk, osteoporosis, depression
- Comorbidities cancer, tuberculosis, CHF, other
- Not just the degree of airflow limitation



# Recognition

Screen the newly admitted patient for COPD and risk factors for COPD

- On admission or during the pre-admission assessment, assess the patient's respiratory status.
- Examine the patient's records for a diagnosis of COPD or for COPD risk factors.
- Review the patient's records for results of any prior tests of pulmonary function or arterial blood gases or pulse oximetry.

# What are the Risk Factors



- Current or past smoker with a 20-pack-year history of smoking, whether or not the patient complains of respiratory symptoms
- Recurrent or chronic respiratory symptoms, including cough and breathlessness on exertion
- History of significant occupational exposure to respiratory irritants
- Family history of pulmonary disease (Alpha-1 antitrypsin deficiency)
- Increased responsiveness to provocative agents (e.g., dust, air pollution, tobacco smoke)
- Childhood factors: low birth weight, frequent respiratory

# Assessment

## Develop a differential diagnosis

In addition to a physical exam, the following laboratory tests are recommended to develop a differential diagnosis:

- ✓ Chest x-ray (if not already done)
- ✓ Complete blood count
- ✓ Chemistry profile
- ✓ Electrocardiogram
- ✓ Pulse oximetry at rest and with activity

# Assess the Severity

- Typically, the disease is classified as mild, moderate or severe
- The 6-minute walk test is a reproducible, practical measure of the level of everyday impairment and exercise tolerance

## Stages of COPD

### COPD Stages I: Mild COPD

#### Stage 1

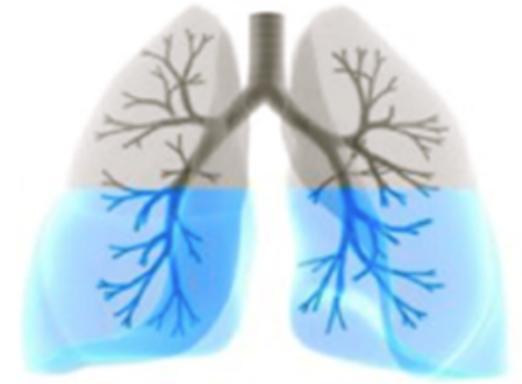
80% Normal Lung Function



### COPD Stages II: Moderate COPD

#### Stage 2

50% - 80% Normal Lung Function

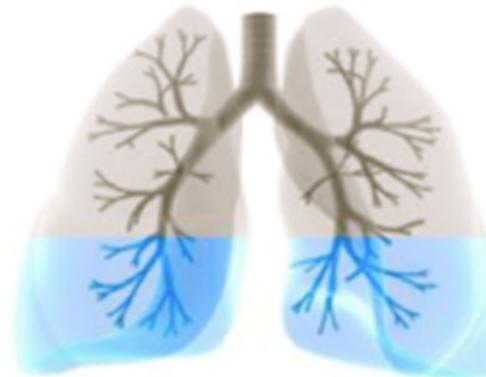


### COPD Stages III: Severe COPD

**COPD Stage III** typically involves severe restraint of Respiration, tininess of breath and frequently *COPD exacerbations*.

#### Stage 3

30% - 50% Normal Lung Function



### COPD Stages IV: Very Severe COPD

**COPD Stage IV** become very severe and risky, and, Thus decreases the life quality with vital COPD Exacerbations.

Lung function FEV1 levels might lower that than 30%.

#### Stage 4

Less Than 30% Normal Lung Function



# Assessment

Assess the stability of the patient's COPD

- Assess on admission and frequently during the course of care
- Obtain Hx. of the frequency and severity of prior exacerbations and knowledge of precipitating events



# Assessment

Obtain input from all members of the interdisciplinary team

- ❑ The assessment of the patient should take into consideration the individual's physical, cognitive, emotional, and spiritual functioning, associated comorbidities, and expectations

Assess the patient's functional status

Should be done at:

- ✓ Baseline
- ✓ Annually
- ✓ Following an acute exacerbation, or when comorbid disease is present

# Summarize the patient's condition

Written summary of the patient's medical condition should:

- Describe the patient's medical conditions and stability, including control of COPD and severity of associated complications.
- Assess the impact of COPD on the patient's functioning and quality of life.
- Where relevant, provide reasons why other suspected diagnoses were not pursued (e.g., patient too frail, terminal, unwilling to undergo further interventions.)
- List applicable treatments for the patient's COPD and coexisting medical conditions. Give reasons for recommending the use or non-use of identified treatment options in this patient, considering his or

# Treatment

Develop an individualized care plan and define treatment goals

- Treatment goals appropriate for most patients with COPD:
  - Stop cigarette smoking
  - Relieve any reversible airway obstruction
  - Control cough and secretions
  - Eliminate and prevent infection
  - Address complications (heart failure, severe hypoxemia)
  - Avoid aggravating factors (bronchial irritants, harmful medications)
  - Relieve depression and anxiety
  - Maximize exercise tolerance

# Treatment

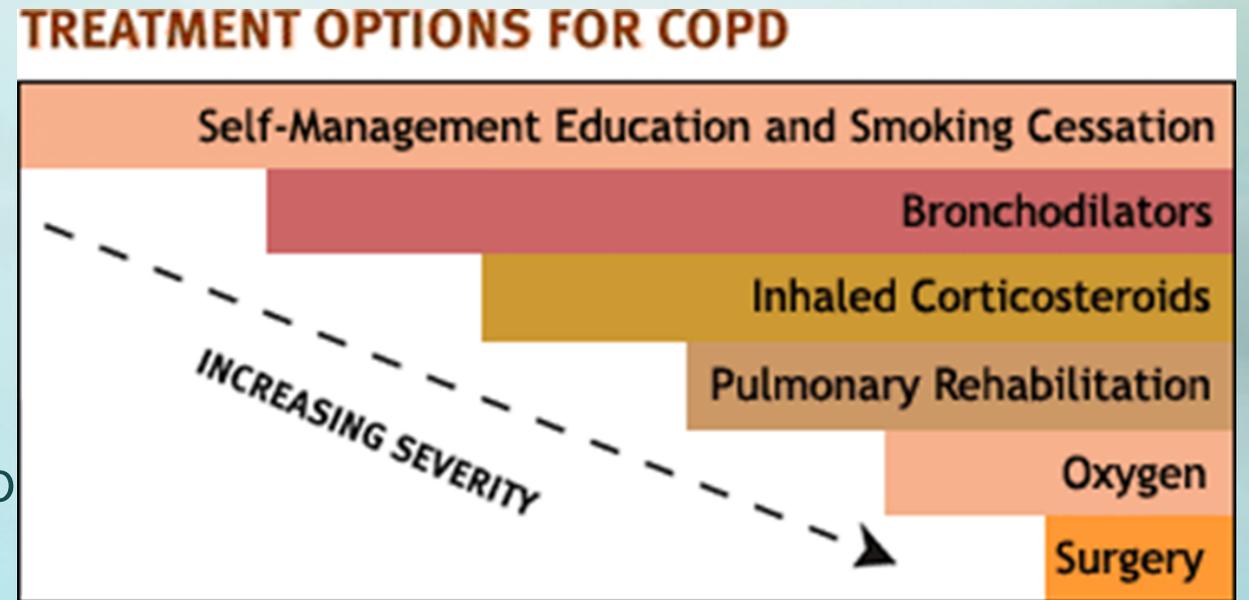
Implement facility-wide programs and policies to encourage smoking cessation

- Smoking cessation, with continued abstinence, is the single most effective way to improve outcomes for patients at all stages of COPD, from asymptomatic to severe
- Smoking cessation substantially benefits lung function, slowing the decline



# Management of Stable COPD

- Individualize care
- Education
- Exercise (pulmonary rehabilitation)
- Medications
- No medication can modify the long-term decline of the disease (trajectory)
- Bronchodilators – Central to the management
- Corticosteroids
- Influenza and pneumococcal vaccines
- Oxygen (2-5 liters/min)



# Treatment

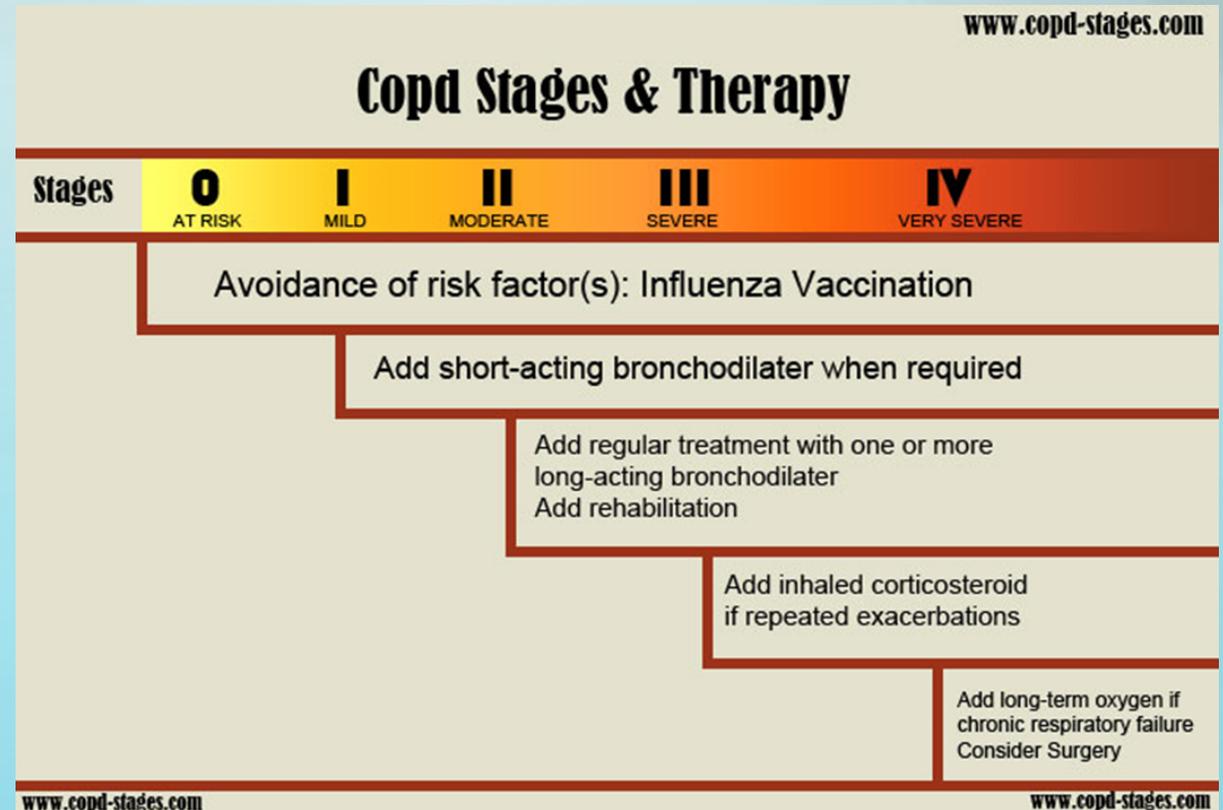
Prescribe supplemental oxygen therapy if appropriate

- Oxygen may be administered as long-term continuous therapy, during exercise, or as needed to relieve acute dyspnea
- The primary goals of oxygen therapy are to increase baseline arterial oxygen pressure (PaO<sub>2</sub>) to at least 60 mm Hg at rest (at sea level) and/or obtain arterial oxygen saturation (SaO<sub>2</sub>) of at least 90 percent



# Treatment

- ✓ Ensure that the patient is protected against respiratory tract infections
- ✓ Patients with COPD are at risk for increased morbidity and mortality from respiratory tract infections
- ✓ Pneumococcal and influenza vaccinations, both alone and in combination, have been shown to reduce hospitalization and mortality



# Treatment

Implement appropriate pharmacologic interventions

- Goals are to:
  - prevent or control symptoms
  - reduce the frequency and severity of exacerbations
  - Improve health status
  - improve exercise tolerance

None of the existing medications for COPD have been shown conclusively to modify the long-term decline in lung function

# Inhaled Bronchodilators are KEY in the Management of COPD Symptoms

## Goals for treatment of stable COPD

- Relieve symptoms
  - Improve health status
  - Prevent exacerbations
  - Prevent disease progression
- May be used PRN in mild cases
  - Long-acting agents - more effective/convenient
  - Two different agents may improve efficacy/decrease side effects
  - Spacers and nebulizers are very beneficial and recommended for inhaled agents



# Education is Key!

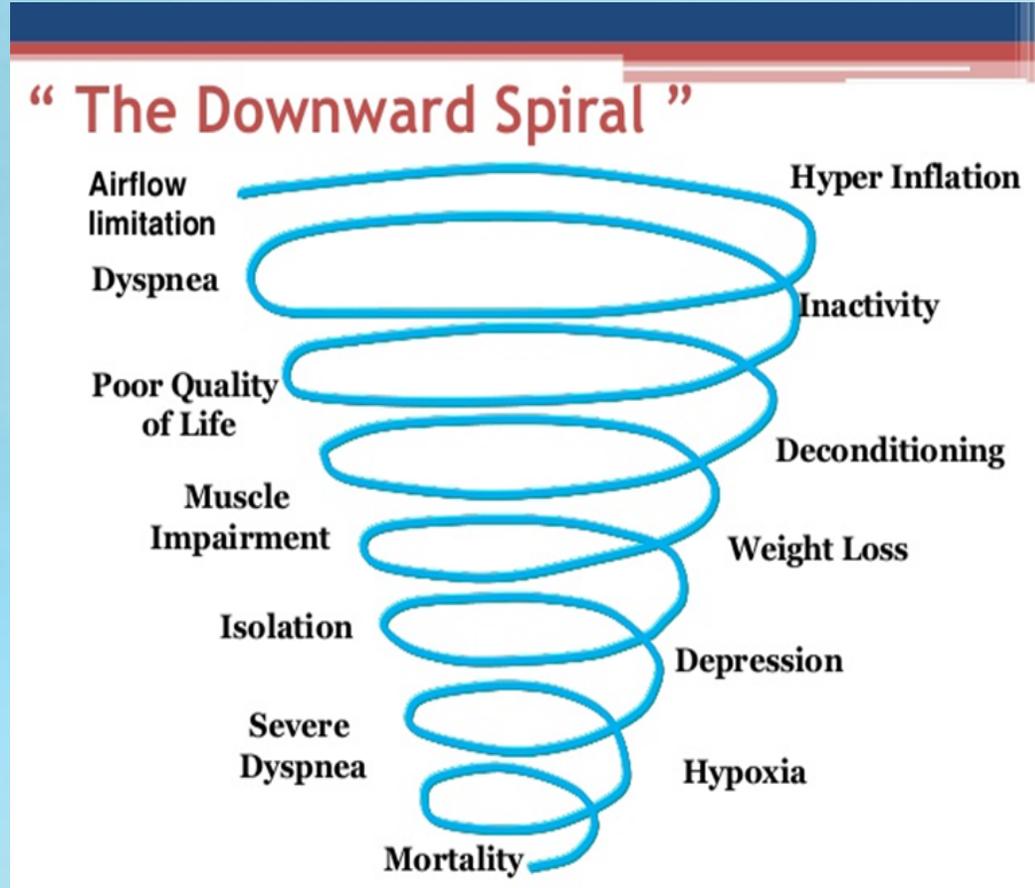
- Train patients and caregivers in the proper administration of inhaled medications.
- Carefully assess the patient's response to therapy and adjust treatment accordingly.
- Tailor the medication delivery system to the patient's needs.



# Challenges When Administering Medications

- Use of inhalers
- Cognitively impaired residents
- Spacers
- Incorrect cleaning and storages of MDIs and spacers
- Communication with physicians

# Treatment



- Treat acute exacerbations of COPD promptly
- Recognize and report the acute exacerbation
- Implement initial treatment of the acute exacerbation, assess the severity of the episode, and contact the practitioner
- Initiate treatment
- Decide whether the patient with an acute exacerbation of COPD should be hospitalized
- When the acute exacerbation resolves, taper or discontinue medications prescribed to treat it

# Prevention of COPD Symptoms

The characteristic symptoms of COPD are chronic and progressive dyspnea, cough, and sputum production that can be variable from day-to-day.

- **Dyspnea:** Progressive, persistent and characteristically worse with exercise.
- **Chronic cough:** May be intermittent and may be unproductive.
- **Chronic sputum production:** COPD patients commonly cough up sputum.

# COPD

CHRONIC AIRFLOW LIMITATION  
"EMPHYSEMA AND CHRONIC BRONCHITIS"

- Easily Fatigued
- Frequent Respiratory Infections
- Use of Accessory Muscles to Breathe
- Orthopneic

- Wheezing
- Pursed-Lip Breathing
- Chronic Cough
- Barrel Chest
- Dyspnea
- Prolonged Expiratory Time

- Cor Pulmonale (Late in Disease)

- Thin in Appearance

- Bronchitis - Increased Sputum

- Digital Clubbing



# Acute Exacerbations Risk Factors

- Active or passive smoking
- Adverse drug effect (sedatives, hypnotics, beta-blockers, etc.)
- Delayed diagnosis of COPD
- Diabetes mellitus
- Electrolyte disturbances
- Episode of CHF
- Exposure to air pollution
- Failure to use oxygen therapy
- Inappropriate use of bronchodilators
- Mouth infections, lack of dental care
- Pneumonia
- Pulmonary thromboembolism
- Recurrent gastroesophageal reflux
- Renal failure
- Viral or bacterial respiratory tract infection

# Signs and Symptoms of an Acute Exacerbation

Change from baseline in

- breath sounds
- cognitive status
- sputum color
- sputum production

Increase from baseline in

- anxiety
- heart rate
- respiratory rate
- shortness of breath
- wheezing

- Delirium
- Lethargy



# Managing Acute COPD Exacerbations

- The most common causes of COPD exacerbations are viral upper respiratory tract infections and infection of the tracheobronchial tree.
- Diagnosis relies exclusively on the clinical presentation of the patient complaining of an acute change of symptoms that is beyond normal day-to-day variation.
- The goal of treatment is to minimize the impact of the current exacerbation and to prevent the development of subsequent exacerbations.
- Short-acting inhaled beta<sub>2</sub>-agonists with or without short-acting anticholinergics are usually the preferred bronchodilators for treatment of an exacerbation.
- Systemic corticosteroids and antibiotics can shorten recovery time, improve lung function (FEV<sub>1</sub>) and arterial hypoxemia (PaO<sub>2</sub>), and reduce the risk of early relapse, treatment failure, and length of hospital stay.

# Treatment

- When the acute exacerbation resolves, taper or discontinue medications prescribed to treat it
- Intervene as appropriate to minimize comorbidities and complications
- Determine when the patient's condition should be considered end-stage

# Manage Comorbidities

- Cardiovascular disease (including ischemic heart disease, heart failure, atrial fibrillation, and hypertension) is a major comorbidity in COPD and probably both the most frequent and most important disease coexisting with COPD.
- Osteoporosis and anxiety/depression: often underdiagnosed and associated with poor health status and prognosis.
- Lung cancer: frequent in patients with COPD; the most frequent cause of death in patients with mild COPD.
- Serious infections: respiratory infections are especially frequent.
- Metabolic syndrome and manifest diabetes: more frequent in COPD and the latter is likely to impact on prognosis.

# Indicators for Palliative or Hospice Care in Pulmonary Disease

- Disabling shortness of breath at rest
- Progressive respiratory decline
- Increased emergency room visits or hospitalizations
- Low oxygenation at rest (PaO<sub>2</sub> <55 mm Hg or SaO<sub>2</sub> <88%)
- Progressive weight loss greater than 10% in last 6 months
- Resting heart rate >100 beats/m

**COPD Final Stage**

# Monitoring

Monitor the patient's symptoms and functional ability

- Reassess the following aspects of the patient's status at regular intervals:
  - Stability of vital signs
  - Ability to speak in full sentences without breathlessness
  - Severity of respiratory symptoms
  - Mental status
  - Ability to perform ADLs independently
  - Endurance
  - Weight
  - Food intake and hydration status
  - Change in sputum production or color
  - Symptoms of anxiety and or/depression

# Monitoring

- Monitor the patient for the appearance or progression of comorbidities and complications
- Monitor medications regularly to ensure that drug interactions and side effects are addressed promptly
- Review medications at any time that a significant change is noted in the patient's clinical condition
- Monitor the facility's management of COPD
- Systematic monitoring is needed to determine the extent to which a long-term facility is successful in managing COPD
- The medical director should be actively involved in this process

# Resident Care Planning

- The care plan should be individualized, but may include the following:

- Education of resident and family
- Stop cigarette smoking and avoid aggravating factors
- Reduce symptoms and complications associated with COPD
- Maximize exercise tolerance
- Reduce acute exacerbations
- Prevent and treat any infections
- Use evidence-based treatment options to optimize drug therapy
- Avoid or minimize therapy-related adverse events

# Summary

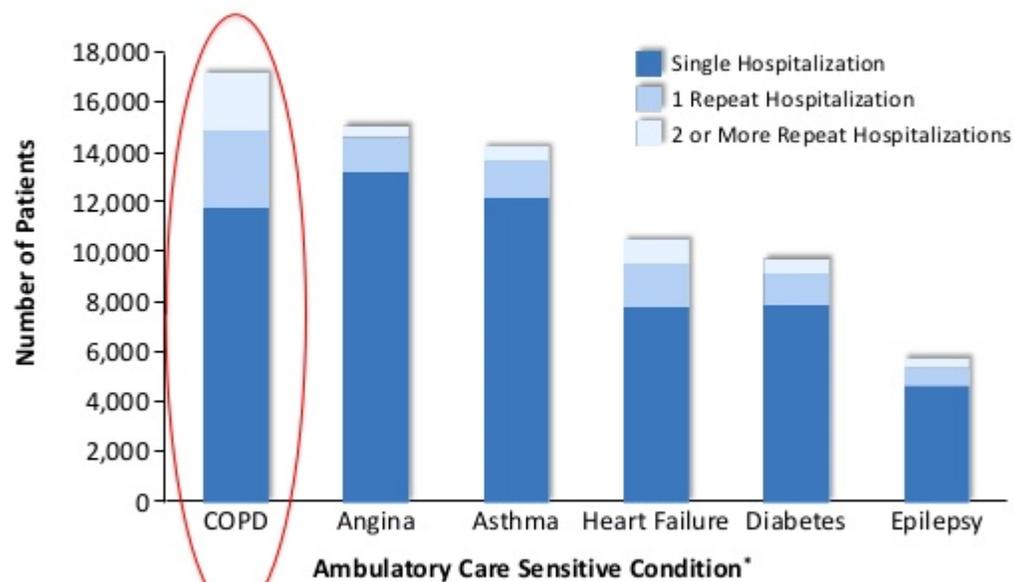
- Chronic obstructive pulmonary disease (COPD) is the third leading cause of death in the United States
- In contrast to other major chronic diseases, prevalence of and mortality from COPD are increasing
- Although COPD is by definition not fully reversible, effective interventions exist that can ameliorate symptoms of the disease and significantly improve patients' quality of life

**Table 1 Discharge Criteria for COPD**

- Able to use long-acting bronchodilators, either beta2-agonists and anticholinergics with or without inhaled corticosteroids.
- Inhaled short-acting beta2-agonist therapy is required no more frequently than every 4 hours.
- Patient, if previously ambulatory, is able to walk across room.
- Patient is able to eat and sleep without frequent awakening by dyspnea.
- Patient has been clinically stable for 12-24 hours.
- Patient (or home caregiver) fully understands correct use of medications.
- Follow-up and home care arrangements have been completed (eg, visiting nurse, oxygen delivery, meal provisions).
- Patient, family, and physician are confident that the patient can manage successfully at home.
- Consider pulmonary rehabilitation.

Source: Adapted from: Global Initiative for Chronic Obstructive Lung Disease (GOLD) Executive Summary. Updated 2013. Available at: [www.goldcopd.org/uploads/users/files/GOLD\\_Report\\_2013\\_Feb20.pdf](http://www.goldcopd.org/uploads/users/files/GOLD_Report_2013_Feb20.pdf).

## COPD: The Leading Cause of Hospital Admissions Today



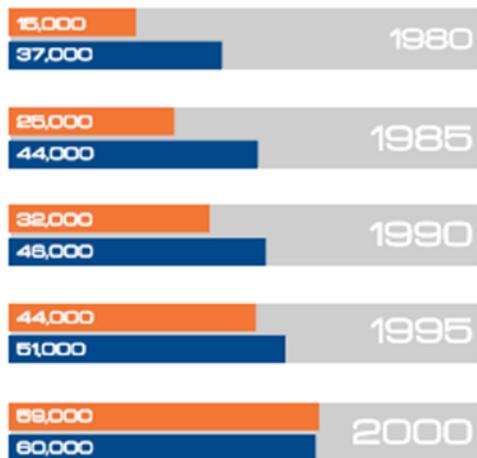
\*An ambulatory care sensitive condition is a condition that is normally manageable on an outpatient basis. Data are for the Canadian population, excluding Quebec. Canadian Institute for Health Information. Health Indicators 2008. Ottawa: CIHI; 2008.



# WOMEN AND COPD

COPD, or Chronic Obstructive Pulmonary Disease, is an umbrella term used to describe progressive lung diseases including emphysema, chronic bronchitis, refractory (non-reversible) asthma, and some forms of bronchiectasis. This disease is characterized by increasing breathlessness.

## COPD MORTALITY MEN vs WOMEN



Source: US Centers for Disease Control and Prevention, 2002

## COPD RELATED HOSPITALIZATIONS There were 1.4 MILLION Emergency Room Visits



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Survey, 1994-2000



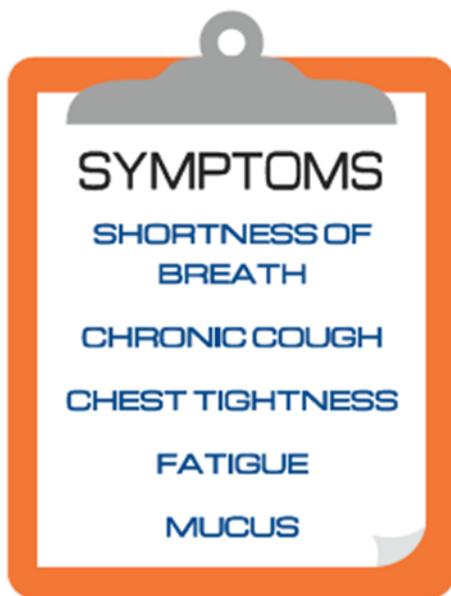
WOMEN ARE 2X LIKELY TO BE DIAGNOSED WITH CHRONIC BRONCHITIS THAN MEN

Source: Centers for Disease Control and Prevention, CDC, National Center for Health Statistics, 2010, National Health and Nutrition Survey, Run Date, 2014



WOMEN WHO SMOKE ARE 13X AS LIKELY TO DIE FROM COPD

Source: U.S. Department of Health and Human Services, The Health Consequences of Smoking: A Report of the Surgeon General, 2004



6% OF U.S. WOMEN HAVE COPD vs 4% OF MEN

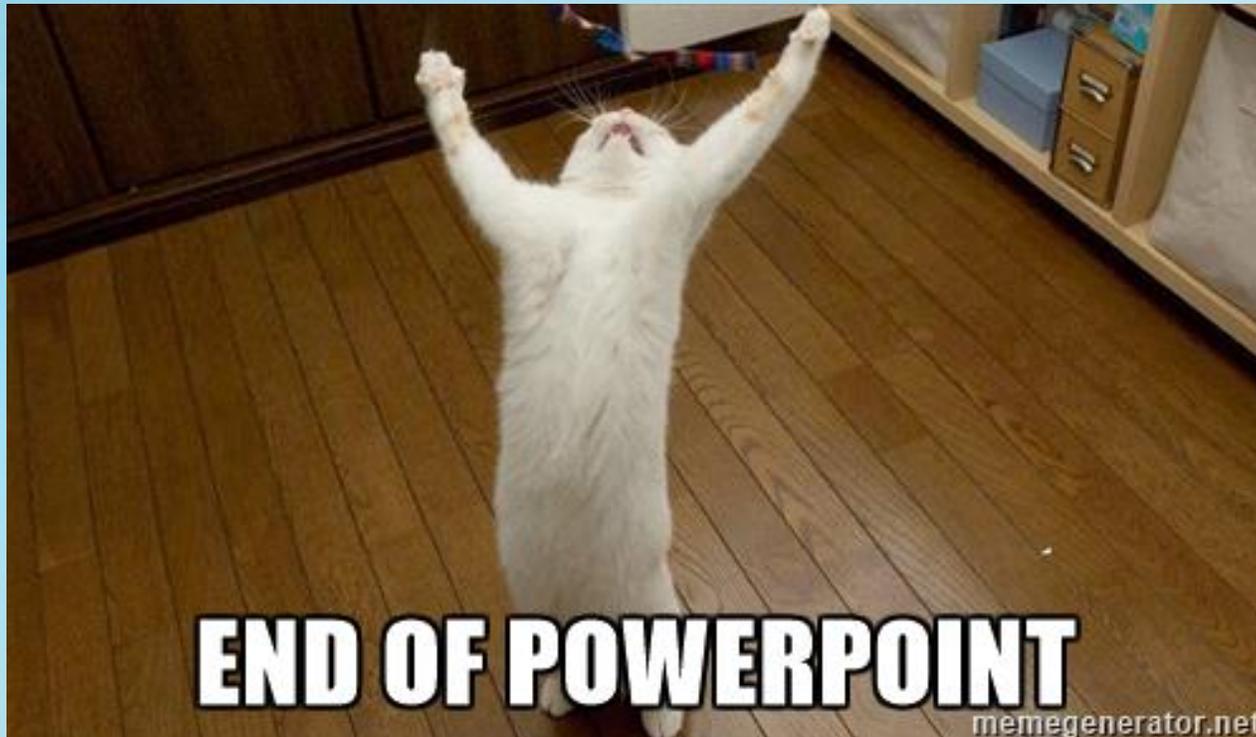
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Survey, 1994-2000





Questions?  
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Thank You!



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