Managing COPD can be done a better way.
A progressive disease needs a proactive approach.

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Stages of COPD
There are four stages of COPD, ranging progressively from mild to very severe. Each stage brings with it different symptoms, and performance on pulmonary function tests (PFTs) typically decreases as the stages progress.

Stage 1
- Stage 1 of COPD has mild symptoms, like some shortness of breath. There's not usually a cough or mucus. Many people do not even realize they have a lung problem at this stage. Results of PFTs are usually 80 percent or more of the predicted response, according to the Global Initiative for Chronic Obstructive Lung Disease.

Stage 2
- At this stage, shortness of breath may feel moderate or severe when exerting oneself. You may or may not have a cough or sputum. Many people first seek medical care at this point because of the symptoms. PFT results are 50-80 percent of the expected response.

Stage 3
- This brings severe symptoms, with an increase in shortness of breath. Again, you may or may not have a cough, sputum, or both. Exercise is very difficult at this point. Fatigue is increased, and quality of life begins to suffer. Results of PFTs are 30-50 percent of the predicted response.

Stage 4
- The most severe stage of COPD, this brings with it a significantly reduced quality of life because of shortness of breath. Trouble breathing may even be life-threatening during some episodes. Performance on PFTs are less than 30 percent of the expected response.

Pathophysiology of COPD
- Hypoxemia is a result of a V/Q mismatch.
- Consequent hypoxia is a result of airway flow limitations, pulmonary hypertension, and systemic inflammation.
- Exertional hypoxia is a result of decreased lung volumes.
- Increased mucus production is due to impaired gas exchange and compromised mucociliary lining.
- Hypercapnia is the result of lungs tissues decreased elasticity, hindering the recoil needed to expel CO2.
- Anxiety associated with being “Air Starved” can cause psychosomatic respiratory distress.
- Late stage respiratory distress is secondary to severely diminished lung volumes.
COPD Respiratory Distress
And
Medication Based Treatments

**Physiology**
- Broncho-Constriction
- Chronic Hypoxia
- Excessive Mucus Production
- Airway Inflammation
- Decreased Lung volumes/acute sob
- Anxiety/Air starved
- Exertion Induced Hypoxia

**Treatment**
- Bronchodilators
- Oxygen
- Saline Nebulizers, Guaifenesin
- Corticosteroids
- Opioids/Benzodiazepines
- Opioids/Benzodiazepines
- Oxygen
  POST exertion to speed up recovery phase

Non-pharmaceutical Therapies

**Physiology**
- > CO2 Respiratory Distress/Failure
- Broncho-Constriction
- Excessive Mucus Production
- Decreased Lung volumes
- Anxiety/Air starved
- Exertion Induced Hypoxia

**Treatment**
- BIPAP
- Cool Aerosol
- AcapellaPEP/Flutter Valve/CPT
- BIPAP/Incentive Spirometer
- Cool Direct Air/Fan
- BIPAP, Cool Direct Air
  Post Exertion To Speed Up Recovery Phase

Non-Invasive Positive Pressure Ventilation
BIPAP

**Patient's Tidal Lung Volume VT**
- Increased Inhalation VTI Decreases SOB/RR
- Increased Exhalation VTE Decreases CO2
- Decreases Work Of Breathing
- Decreases Accessory Muscle Fatigue
- Increase Energy
- Optimizes Caloric Intake
Side Effects of Standard Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Side Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broncho-Dilators</td>
<td>HR, Tremors, Anxiety</td>
</tr>
<tr>
<td>Oxygen</td>
<td>&gt; O2 Can &gt; CO2</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>Laryngeal Spasm, Aggression, Restless</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>Claustrophobia, Anxiety, Fighting with the Pressure</td>
</tr>
<tr>
<td>BIPAP</td>
<td>&lt; LOC &lt; Ability to Ventilate and the Ability to Cough Effectively</td>
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<td>Benzodiazepines</td>
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Cough Suppressants
If cough suppressants are over used the congestion will become thick and infected
Three reasons to suppress a cough
Sleepless, Breathless, Gagging and Vomiting
Coughing is caused by different things and should be treated in different ways

<table>
<thead>
<tr>
<th>Cause</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Pulmonary Congestion</td>
<td>Robitussin DM/Equivalent</td>
</tr>
<tr>
<td>Nasal Drainage</td>
<td>Decongestant</td>
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<tr>
<td>Laryngeal Spasm</td>
<td>5ml 2% Lidocaine/2.5ml Normal Saline Nebulizers</td>
</tr>
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Don’t Give Up So Easily
COPD is a slow progressive disease. If these patients contract an acute respiratory infection they will decline rapidly.
Hospitals typically give up fast on these patients and that’s when they seek hospice/palliative care.
Be aggressive in resolving the acute issue while increasing the therapies to manage their chronic condition. Then wean down the level of care as the patients acute issue resolves.
There is no reason that, once the acute illness resolves, that the patients can’t regain close to the quality of life they had prior.