Initial Management Plan:

- **Assess severity and co-morbidity**
- **Use short acting beta-2 agonist via MDI and spacer or nebuliser (A)**
- **Assess the need for an antibiotic (change in sputum volume or colour, fever)**
- **Provide an oral antibiotic for 7-10 days (e.g. amoxicillin 500mg tid)**
- **Provide a short course of oral corticosteroids (A)**
- **Usually prednisone 30-40mg once for 5-10 days**
- **Arrange to re-assess in 1-2 days for practice nurse or outreach service if unstable**
- **Set criteria for calling an ambulance (deterioration, confusion, vomiting, chest pain, ankle swelling)**

Further assessment of more severe patients:

- **Arrange for assessment at ED or After Hours Medical Centre:**
  - **Pulse oximetry (should be >90%)**
  - **Chest radiograph (to exclude pneumonia, left heart failure, neumothorax)**

If air flow limitation is fully or substantially reversible, the patient should be treated as for asthma (D)

Manage eXacerbations

**Causes of exacerbations include:**
- Viral infection
- Bacterial infection – often *Haemophilus influenzae*, *Streptococcus pneumoniae* or *Moraxella catarrhalis*
- Air pollution episode

**Early diagnosis and treatment is essential:**
- A self management plan may assist decision making (D)
- Early contact with the GP is recommended (C)
- A supply of antibiotics and/or prednisone may be valuable in selected patients (B)

In more severely affected patients a key decision is whether it is safe to treat at home:

- **Small factors are often important:**
  - Able to cope at home?
  - Availability of family/friends to provide support, meals etc?
  - Clinical factors to assess include:
    - History of life-threatening episodes/respiratory arrest
    - Degree of breathlessness
    - Evidence of confusion
    - Signs of hypoxaemia – cyanosis/oximetry below 90%

**Initial Management Plan:**

- **Evaluating severity and co-morbidity**
- **Use of short acting beta-2 agonist via MDI and spacer or nebuliser (A)**
- **Assess the need for an antibiotic (change in sputum volume or colour, fever)**
- **Provide an oral antibiotic for 7-10 days (e.g. amoxicillin 500mg tid)**
- **Provide a short course of oral corticosteroids (A)**
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If air flow limitation is fully or substantially reversible, the patient should be treated as for asthma (D)
Asthma
Optimise Function

- Nutrition review
- Confirm Diagnosis
- Asthma still suspected?
- Symptom Continuum
- COPD
- Prevent Deterioration
- Smoke +/- symptoms
- Spirometry and bronchodilator response
- FVC/CXR/EGG
- Normal
- >400mls increase FEV1
- >400mls increase FEV1
- Asthma
- Probable COPD
- Other diagnosis
- Treatment Steps
- Short acting bronchodilators
- Inhaled corticosteroids
- Beta-2 agonist or ipratropium beta-2 agonist
- Consider inhaler technique
- Use spacer with MDI
- Pulmonary Rehabilitation
- Long acting bronchodilators (e.g. tiotropium)
- Consider inhaled corticosteroids
- FEV1 >50% predicted AND > 2 exacerbations/year
- For more severe patients consider:
- Case Conference
- Specialist referral
- Symptom Continuum
- Asthma
- Other diagnosis
- In severe patients consider:
- LTOT referral if O2 saturation <85%

Notes
1. In establishing the diagnosis of COPD in a patient presenting for the first time it is important to:
   - take a history of relevant respiratory symptoms (coughing of breath, cough and sputum production)
   - integrate this with the smoking and occupational history
   - ensure the patient has recent FBC, chest x-ray and ECG
2. The alternative diagnosis of asthma should always be considered in the first instance. Differences between asthma and COPD are shown in the table. Lack of a full spirometry record for further investigations for asthma according to the NZ Asthma Guidelines is also recommended.
3. Other main diagnoses in an older age group are heart disease (left and/or right cardiac failure), another form of chronic obstructive pulmonary disease (bronchitis, sarcoidosis, allergic asthma, interstitial lung disease), respiratory musculature or chest wall disorders and obesity (testing centre or hospital laboratory). Bronchodilator response can be helpful, but there is no absolute level of an increase in FEV1 that will exclude asthma in all cases. In more complex cases a referral to a general physician or respiratory physician may be required.
4. The long-acting bronchodilator tiotropium is a significant advance in the management of COPD. Check the PHARMAC web site www.pharmac.govt.nz (Pharmaceutical Scheme) for current availability and pricing.
5. Inhaled corticosteroids should be considered in more severe patients who have had more than two exacerbations per year. The evidence for this is not especially strong and the side effects of these drugs outweigh the benefits, they should be stopped.
6. Third line agents for the management of COPD include the long acting beta agonists (salmeterol) and, in some instances, a psychologist may all assist in rehabilitation programmes, with attention to nutrition and rehabilitation.
7. The development of a Care Plan, with multidisciplinary input, is important for patients with moderate to severe disease. All patients should be screened for anxiety, depression and social dependence, which are common in patients with COPD. Input from a respiratory physician, pharmacist and psychologist is important. In some cases, a psychologist may play a role in the development of this plan. These should be co-ordinated by the primary care team, in many cases in conjunction with services operating from the local hospital.
8. Optimising function should focus on both pharmacological and non-pharmacological approaches. Most patients will benefit from short acting bronchodilators – either puffs or in more severe cases regular use. The use of a bronchodilator may improve spirometry dramatically (but may reduce Dynamic hyperinflation and reduce breathlessness during exercise by only 20%). The long acting beta agonists and inhaled corticosteroids in combination a combination agent comprising a beta-2 agonist and ipratropium bromide will be a good initial choice.

Confirm Diagnosis
- Smoker +/- symptoms
- FBC/CXR/EGG
- Normal
- >400mls increase FEV1
- Obstructive pattern FEV1/FVC <70%
- Asthma still suspected?
- Symptom Continuum
- Asthma
- Other diagnosis
- Probable COPD
- Asymptomatic

Prevent Deterioration
- For all patients:
  - Smoking cessation
  - Flu vaccine annually
  - Pneumococcal vaccine every 5 yrs
  - Exercise programme
  - Nutrition review
- Develop Care Plan
- Coordinated by Primary Care with multidisciplinary input
- Identify and Treat:
  - Anxiety
  - Depression
  - Alcohol dependence
- In severe patients consider:
  - LTOT referral if O2 saturation <85%