COPD PATHWAY AND PRESCRIBING GUIDANCE FOR ADULTS

**COPD Diagnosis**
- Smoking History (>20 pack years,) breathlessness and exacerbations
- Obstructive spirometry (mandatory) for a diagnosis – see notes

**Breathlessness and or exercise limitation**
- SABA or SAMA as Required

**Exacerbations or persistent Breathlessness**
- LABA/LAMA as Required

**Diagnosis of COPD on background of asthma**
(Asthma COPD overlap syndrome, ACOS)

- LABA + ICS + LAMA
  - (Triple therapy)

**Inhaler technique**
- check inhaler technique and compliance at every opportunity

**Smokers**
- Ask about smoking at every opportunity and Refer to smoking cessation services

**Mucolytic**
- only prescribe to those with chronic bronchitic phenotype
- stop if no symptomatic improvement after 4 weeks
- prescribe only over winter if that is period of exacerbations
- always reduce from TDS starting dose to BD maintenance after 2 weeks

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**SABA options:**
- Salbutamol 100mcg MDI + spacer PRN (200 doses £1.50)
- Salbutamol 100mcg Easyhaler PRN (200 doses £3.31)
- Salbutamol 100mcg Easi-Breathe PRN (200 doses £6.30)
- Terbutaline 500mcg Turbohaler PRN (100 doses £6.92)
- Salbutamol 200mcg Accuhaler (60 doses £3.00)
- SAMAX
- Ipratropium 20mcg MDI + spacer PRN (200 doses £5.56)

**LABA options:**
- **First line**
  - Formeterol Easyhaler® 12mcg 1 puff BD (£11.88)
  - Serevent Accuhaler® 50mcg 1 puff BD (£29.26)
- **Second line**
  - Oxis Turbohaler® 12mcg 1 puff BD (£24.80)
  - Striveri Respimat® 2.5 mcg 2puffs OD (£26.35)
  - Servent Evohaler® 2puffs BD (£29.26)

**LAMA options:**
- *Seebri Breezhaler®* 50 mcg 1 puff OD (£27.50)
- **Second line**
  - Eklira Genuair® 322mcg 1 puff BD (£28.60)
- **Third line**
  - Incruse Ellipta 58mcg 1 puff OD (£27.50)
  - Spiriva Handihaler® 18mcg 1 puff OD (£34.87)
- # Use with caution in patients with unstable IHD, recent MI, class III or IV heart failure, arrhythmia or prolonged QT interval

**LABA/LAMA options:**
- **First line**
  - Ultibro Breezhaler® 50/110 1 puff daily (£32.50)
  - Duaklir Genuair® 340 / 12 1 puff daily (£32.50)
- **Second line**
  - Anoro Ellipta® 55/22 1 puff daily (£32.50)

**Combination LABA and ICS options:**
- **First line**
  - Duoresp Spiromax® 320/9 1puff BD (£29.97)
  - Relvar Ellipta® 92/22 1 puff OD (£27.80)
- **Second line**
  - Fostair® 100/6 MDI 2 first line BD via spacer (£29.32)
  - Symbicort Turbohaler® 400/12 1 puff BD (£38.00)
  - Seretide Accuhaler 500/50 1 puff BD (£41.00)

**Mucolytic:**
- Carbocisteine 750mg BD (£205 p.a maintenance dose)

Prices in brackets are monthly costs unless stated otherwise. Prices obtained from MIMS June 2015 and may change.
Specific recommendations for COPD patient care

Diagnosis
Spirometry is mandatory to make a diagnosis as the majority of smokers will not develop clinically significant COPD. As part of normal aging, lungs lose elasticity and the FEV₁/FVC ratio reduces with age. A more reliable measure than using a fixed ratio of <0.7 is to define airways obstruction as an FEV₁/FVC ratio of less than the lower limit of normal (less than the bottom 5% of normally distributed values). In practice the normal FEV₁/FVC ratio range at different ages is 0.6-0.8 so any value <0.6 always indicates airways obstruction. The severity of airways obstruction is determined by the percentage predicted FEV₁.

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<thead>
<tr>
<th>NICE 2010 COPD severity</th>
<th>FEV₁</th>
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<tbody>
<tr>
<td></td>
<td>&lt; 30%</td>
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<tr>
<td>very severe</td>
<td>30-50%</td>
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<tr>
<td>severe</td>
<td>50-80%</td>
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<tr>
<td>moderate</td>
<td>&gt;80%</td>
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<tr>
<td>mild (requires symptoms</td>
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<td>to be significant)</td>
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Management
- Stopping smoking is the key intervention in COPD. Smoking should be addressed at every opportunity and referral made to smoking cessation services.
- Treatment with pharmacotherapy is indicated in COPD patients with exacerbations and/or persistent dyspnoea.
- Patients still breathless despite SABA or SAMA should be tried with a LAMA.
- Failure to improve symptomatically on either LABA or LAMA should result in the drug being stopped and an alternative tried
- First line once daily LAMAs is Glycopyrronium (seebri breezhaler®). Tiotropium is third line. We acknowledge the larger data set and safety data with tiotropium.
- The combination inhaler choices are those providing total doses of 800-1000mcg of beclometasone equivalent/day, i.e. budesonide 800mcg/day and fluticasone 500mcg/day. *Although some of these devices and doses are off-licence, this decision has been taken in the light of recent evidence demonstrating an increased risk of pneumonia with inhaled corticosteroids in COPD. Inhaled corticosteroid/LABA combination should be used in frequent exacerbators (more than 2 per annum) with FEV₁ < 50%. They can be considered in frequent exacerbators, particularly when these are associated with hospital admissions even when FEV₁ >50%. The ICS component should be discontinued within 6 – 12 months if no benefits are seen.
- Duoresp spiromax (budesonide/formoterol) is recommended over seretide in view of the PATHOS study;¹ Budesonide/formoterol was associated with fewer exacerbations, fewer COPD-related hospitalisations and a lower risk of pneumonia when compared to seretide (fluticasone/salmeterol).
- Only prescribe carbocisteine in those with chronic sputum production and reduce to BD maintenance dose.
- Check inhaler technique and use In-Check device to ensure flow rates 30-90 L/minute for all dry powder devices. MDI’s must be prescribed with a spacer.

Inhaler Choice
Following a CTUHB inhaler review panel; Seebri® / Ultibro® / and Duoresp® are the preferred LAMA/LABA/LAMA/LABA/ICS respectively. This is following a review of evidence ¹-40, patient usability and cost. Prescribers are free to prescribe alternatives from the formulary should they feel the need.
References

1. Prof C. Jensen et al. Pneumonia and pneumonia related mortality in patients with COPD treated with fixed combinations of inhaled corticosteroid and long acting β₂ agonist: observational matched cohort study (PATHOS). British medical journal. 2013;346:f3306 available online [http://www.bmj.com/content/346/bmj.f3306 ]

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