

Nottinghamshire COPD Guidelines

Task 1	Confirm COPD diagnosis: Usually smoker or ex-smoker, Spirometry $FEV_1 < 80\%$ predicted (although occasionally $>80\%$) and post bronchodilator FEV_1/FVC ratio $< 70\%$ and symptoms typical of COPD (<u>Exclude diagnosis of asthma:</u> variable chest tightness; wheeze; cough and breathlessness; night-time waking; significant diurnal variation of symptoms and peak expiratory flow; symptoms related to work; normalisation of spirometry after inhaled β_2 -agonist or a course of inhaled/oral corticosteroids). COPD usually in those >35 years old. Measure BMI Do CXR/FBC, ECG to help exclude or confirm diagnosis. Observe for red flag symptoms such as haemoptysis
Task 2	Stop smoking: only clinically effective intervention to slow disease progression. All patients should be provided with a brief intervention, advised to quit and sign posted to stop smoking services (NNT 5 – to prevent death at age 70)
Task 3	Refer for pulmonary rehabilitation – if COPD with MRC dyspnoea score 3-5, OR if functionally limited regardless of their MRC score (NNT 2 - to improve exercise tolerance by a clinically useful amount, NNT 4 to stop readmission over 6/12 if given early after an exacerbation)
Task 4	Offer vaccinations - influenza annually / pneumococcal PPV23 (one off) as per ' Green Book '
Task 5	Oxygen Saturations $\leq 92\%$ on more than one occasion when stable on optimal medication or 8 weeks after exacerbation - refer to local oxygen assessment service
Task 6	Consider medication: Drug treatment should be guided by breathlessness and exercise limitation, exacerbation frequency, symptoms, disability and physiological complications that the patient experiences. At different times in the natural history of their disease different features may predominate and their management should change to reflect this.
Task 7	Review Regularly: Consider stopping new treatment if patient feels no improvement (symptomatic benefit is expected in 4 weeks, longer may be needed for reduction in exacerbations) For those self managing patients with an action plan – consider exacerbation “Emergency Supply Pack”: 30mg prednisolone OD for 7 days &/or doxycycline or amoxicillin for 5-7 days. For further details see guidance on ' Emergency Supply Packs ' - note this may not be suitable for all patients (NNT 5 for patient held 'Emergency Supply Pack' to reduce admission)

Treatment Notes

Check if treatment working at every stage and review inhaler technique before adding in therapy

Optimise inhaler technique eg spacer with MDI and review regularly

Triple therapy = ICS/LABA/LAMA – it remains unclear if triple therapy is beneficial

Caution: avoid LABA duplication in **combination** products

Oral corticosteroids (prednisolone) - Maintenance use of oral corticosteroid therapy in COPD is not recommended and carries considerable risks (i.e. osteoporosis, muscle wasting etc.). Do not start in primary care, refer for specialist review

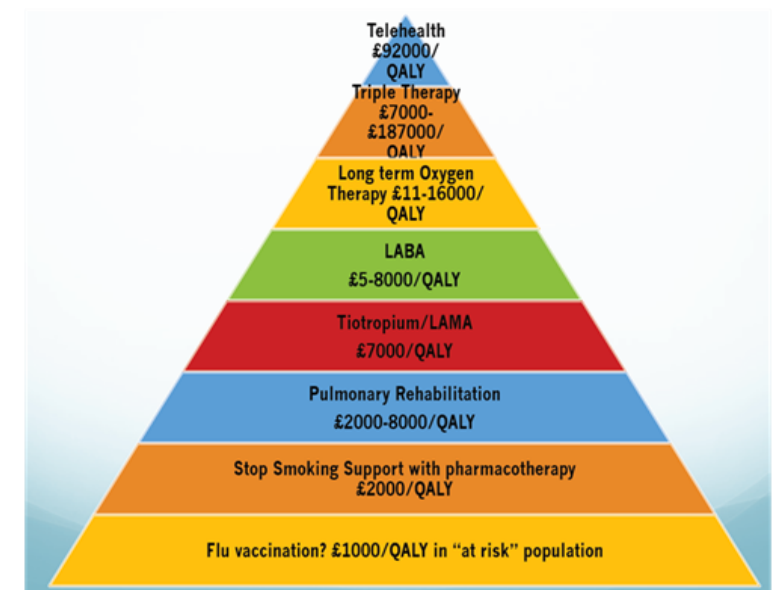
Consider osteoporosis prophylaxis for patients having 3 courses of steroid within 12 months

Patients on high dose ICS should receive a steroid card (ie >800 mcg BDP equivalent)

Macrolide antibiotics (e.g. azithromycin). Initiated and guided by specialist respiratory physician only, aimed to reduce frequency of exacerbations. Review for appropriateness if ongoing exacerbations .

Re-refer for pulmonary rehabilitation if frequent exacerbations or more than a year since last course

COPD Value Pyramid (Cost/QALY)
London Respiratory Team



All breathless patients	Salbutamol (SABA) or Ipratropium (SAMA) as required - SABAs may continue at all stages		
<p>Before a new prescription:</p> <ul style="list-style-type: none"> • Check adherence with medicines (prescription refill records) • Teach inhaler technique before prescribing and ask patients to demonstrate technique regularly • Provide and update plan for responding to symptoms • Use spacer to optimise inhaler technique if using MDI 	<p>Persistent Breathlessness and Exercise Limitation</p> <p><i>Initial treatment</i></p> <p>Long-acting muscarinic antagonist (LAMA) (NB: Stop SAMA)</p> <p style="text-align: center;">Or</p> <p>Long-acting β2 agonist (LABA)</p> <p>Review after 1 month</p> <p>Discontinue if no improvement in symptoms, even small improvements may be worthwhile</p> <p><i>Step up treatment</i></p> <p>If persistent breathlessness to Combination LABA / LAMA inhaler</p> <p>(NB: stop single LABA or LAMA)</p>	<p>Frequent Exacerbations</p> <p><i>Consider</i></p> <p>Long-acting β2 agonist / inhaled steroid (ICS/LABA combination)</p> <p>If patient does not meet criteria below, give LABA / LAMA alone</p> <p>ICS/LABA combination should only be introduced at time of clinical stability (ie not at time of exacerbation) in those with documented proof of FEV1<50% AND \geq2 exacerbations in last year</p> <ul style="list-style-type: none"> • Prescribe ICS/LABA by brand name • Evaluate clinical response (exacerbations) after 12 months to assess ongoing benefit • If frequent exacerbations continue (eg \geq2 exacerbations in last year) consider specialist referral <p>Use ICS/LABA with caution in any person with a history of chest X-ray confirmed pneumonia. Review patients who develop pneumonia whilst on high dose ICS, consider ongoing need, switching product or weaning with a view to stopping</p> <p>Steroid Step Down</p> <p>If ICS being withdrawn as patient does not meet criteria—step down, do not stop abruptly. Monitor for emerging symptoms.</p> <p>To step down from ICS, halve steroid dose no more frequently than 6 weekly and ensure LABA dose maintained.</p> <p>NB: Do not withdraw ICS if patient has mixed COPD/asthma diagnosis or if patient known to have raised eosinophil count</p>	<p>Chronic Productive Cough</p> <p>If troublesome phlegm consider trial of carbocisteine 750mg TDS for 4 weeks, then reduce to 750mg BD if improvement in sputum production and reduction in viscosity. Stop if no improvement and consider using in winter months only. Consider physio referral for chest clearance techniques</p> <p>Exacerbations</p> <p>Symptoms (persistent >48 hours) of an exacerbation include either/or:</p> <ul style="list-style-type: none"> • Change in sputum colour • Increased quantity of sputum • Increased breathlessness <p>Treat with either oral steroids or antibiotics or both. If not effective re-assess with FBC and sputum culture before prescribing more antibiotics. Consider a chest X-ray and re-confirm diagnosis</p> <p>See guidance above</p>

Check if the treatment is working?

- Has your treatment made a difference to you?
- Is your breathing easier?
- Can you do things now that you could not do at all before?
- Can you do the same things as before but are less breathless now?
- Has your sleep improved?

	Inhaler device	SABA or SAMA	LABA	LAMA	LABA/LAMA	ICS/LABA – prescribe by brand name
Slow and steady inhalation	MDI	Salbutamol 100mcg 2 puffs PRN (£1.50) or Ipratropium 20mcg 1-2 puffs PRN (£5.56)	Salmeterol 25mcg 2 puffs BD (£29.26) or Formoterol 12mcg ONE puff BD (£18.04)			Fostair [®] (beclometasone extrafine/formoterol) 100/6mcg TWO puffs BD via spacer (£29.32) or Symbicort [®] (budesonide/formoterol) 200 / 6mcg TWO puffs BD via spacer (£28.00)
	Respimat		Olodaterol (Striverdi [®]) 2.5mcg TWO puffs OD (£26.35)	Tiotropium (Spiriva [®]) 2.5mcg TWO puffs OD (£23) Caution if eGFR<50ml/min – consider alternative	Spiolto [®] (tiotropium/olodaterol) 2.5/2.5mcg TWO puffs OD (£32.50) Caution if eGFR <50ml/min – consider alternative	
Dry Powder inhalers – quick and deep inhalation	Easyhaler	Salbutamol 100mcg 2 doses PRN (£3.31)	Formoterol 12mcg ONE dose BD (£11.90)			
	Handihaler			Tiotropium (Spiriva [®]) 18mcg ONE dose OD (£33.50) – caution if eGFR <50ml/min – consider alternative		
	Turbohaler	Terbutaline (Bricanyl [®]) 500mcg 1 dose PRN (£8.30)	Formoterol (Oxis [®]) 12mcg ONE dose BD (£24.80)			Symbicort [®] (budesonide/formoterol) 400/12mcg ONE dose BD (£28)
	Genuair			Acclidinium (Eklira [®]) 322mcg ONE dose BD (£28.60)	Duaklir [®] (aclidinium/formoterol) 340/12mcg ONE dose BD (£32.50)	
	Ellipta			Umeclidinium (Incruse [®]) 55mcg ONE dose OD (£27.50)	Anoro [®] (umeclidinium/vilanterol) 55/22mcg ONE dose OD (£32.50)	Relvar [®] (fluticasone furoate/vilanterol) 92/22mcg ONE dose OD (£22.00)
	NEXThaler					Fostair [®] (beclometasone extrafine/formoterol) 100/6mcg TWO doses BD (£29.32)
	Spiromax					Duoresp [®] (budesonide/formoterol) 320/9mcg ONE dose BD (£27.97)

Costs shown are for 30 days for regular treatment or per inhaler for PRN treatment. Use the most cost-effective inhaler device a patient can effectively use