Nottinghamshire COPD Guidelines

NHS
Nottinghamshire Area Prescribing Committee

Get the diagnosis right: clinical history and quality-assured diagnostic spirometry

COPD diagnosis: Age > 35yrs and usually current smoker or ex-smoker with 1 or more symptoms: Exertional breathlessness, Chronic cough or wheeze, Regular sputum production History of chest infections Confirm diagnosis with spirometry FEV_1 < 80% predicted (although occasionally >80%) and post bronchodilator FEV_1/FVC ratio < 70% and symptoms typical of COPD Measure BMI Do CXR/FBC, ECG to assess for co-morbidities. Consider co-morbidities eg CVD/Mental health problems and optimise treatment Observe for red flag symptoms such as haemoptysis	Exclude markers of asthma: 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 β2-agonist or a course of inhaled/oral corti-costeroids)

Ensure highest value interventions are offered to all patients and revisit at every review

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

Refer for pulmonary rehabilitation - if COPD with MRC dyspnoea score 3-5, **OR** if functionally limited regardless of their MRC score. Consider re-referral if frequent exacerbations or more than a year since last course

Give vaccinations - influenza annually / pneumococcal PPV23 (one off) as per 'Green Book'

Optimise treatment for comorbidities and co-develop a self management plan in collaboration with the patient and their family members or carers as appropriate

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. Agree with patient that new treatment is done as a trial and stop if no benefit. Discuss risks and benefits of starting treatment ie risks of ICS

Review Regularly: Stop new treatment if patient feels no improvement (symptomatic benefit is expected in 4 weeks, longer may be needed for reduction in exacerbations) For those patients with a self management plan – consider exacerbation "Emergency Supply Pack": 30mg prednisolone OD for 5 days &/or doxycycline or amoxicillin for 5 days. For further details, including 2nd line antibiotics, see guidance on 'Emergency Supply Packs' - note this may not be suitable for all patients

Oxygen Saturations ≤92% on more than one occasion when stable on optimal medication or 6 weeks after exacerbation - refer to local oxygen assessment service

Treatment Notes - Review all patients at least annually

Check if treatment optimised at every opportunity; including review of inhaler technique and adherence before adding in therapy

Caution: avoid inadvertent duplication when using 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 maintenance dose corticosteroids in primary care, refer for specialist review

Consider osteoporosis prophylaxis for patients having 3 courses of steroid within 12 months and think bone health in all patients

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 . NB: ineffective if smoker. Be aware of risk of hearing loss, reversible if stopped early

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All breathless patients
Before a new prescription:

- Optimise current therapy before adding in new treatment
- Check adherence with medicines (view issue history on GP system)
- 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

Check if the treatment is optimised by asking the patient:

- 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 you less breathless now?
- Has your sleep improved?

Inhaled therapy

During COVID-19, DO NOT make changes to treatment in stable patients unless clinically indicated

Offer Salbutamol (short-acting β2-agonist/SABA) or Ipratropium (short-acting muscarinic antagonist/SAMA) as required - SABA may continue at all stages, stop SAMA if LAMA started

If patient limited by symptoms/has exacerbations and has **no asthmatic features/features suggesting steroid responsiveness**

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Offer LAMA/LABA (long-acting muscarinic antagonist/long-acting β2-agonist) combination inhaler

Existing patients who are stable on LAMA or LABA alone can continue until appropriate to change

If patient has day to day symptoms that adversely affect quality of life

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Consider (less evidence of benefit) 3 month trial of *ICS/LABA/LAMA (ideally as a triple combination inhaler)

Review after 3 months and if no improvement, stop ICS and revert to LAMA/LABA. Document in clinical records reason for continuing or stopping ICS treatment

If patient has 1 severe (requiring hospitalisation) or 2 moderate (requiring oral steroids/antibiotics) exacerbations within a year

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Consider (less evidence of benefit) *ICS/LABA/LAMA (ideally as a triple combination inhaler) Document in clinical records reason for continuing or stopping ICS treatment

If patient limited by symptoms/has exacerbations and has **asthmatic features/features suggesting steroid responsiveness**:

- Previous secure diagnosis of asthma/ atopy
- Higher eosinophil count
- Substantial variation in FEV1 over time (≥400ml) or substantial diurnal variation in PEFR (≥20%)

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Consider (less evidence of benefit) *ICS/LABA (inhaled corticosteroid/long-acting β2-agonist) combination inhaler

If patient has day to day symptoms that adversely impact on quality of life **or** has 1 severe (requiring hospitalisation) or 2 moderate (requiring oral steroids/ antibiotics) exacerbations within a year

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Offer *ICS/LABA/LAMA (ideally as a triple combination inhaler) Document in clinical records reason for continuing or stopping ICS treatment

Consider referral if patient is still limited by breathlessness and/or having frequent exacerbations

***Increased risk of side effects (including pneumonia) in patients taking ICS**
Use ICS with caution in any person with a history of chest X-ray confirmed pneumonia. Review patients who develop pneumonia whilst on ICS, **consider** on-going need, switching product or weaning/stopping (see p4)

Offer - strong recommendation **Consider** - recommendation for which evidence of benefit is less certain

This guidance on inhaled therapy is in line with NICE and may not be covered by licensed indications

Chronic Productive Cough
If tenacious sputum **consider (less evidence of benefit)** trial of **carbocisteine** 750mg TDS for up to 4 weeks and **stop if no improvement**. If improvement in sputum production/reduction in viscosity, reduce to 750mg BD. Consider titrating dose according to symptoms (not exceeding doses above). Role for long term use is not clear. Should not be used routinely to prevent exacerbations in patients with stable COPD. Consider physio referral for chest clearance techniques.

Exacerbations
Symptoms (persistent >48 hours) of an exacerbation include:

- Change in sputum colour/ increased quantity of sputum - start antibiotics
- Increased breathlessness - start oral steroids

If not effective re-assess with FBC and sputum culture before prescribing further antibiotics. Consider a chest X-ray and re-confirm diagnosis.
See COPD self-management plan

	Inhaler device	SABA or SAMA	*LAMA –prescribe by brand name	LAMA/LABA - prescribe by brand name	ICS (moderate dose) /LABA – prescribe by brand name	Triple therapy -ICS (moderate dose) / LABA/LAMA - prescribe by brand name
Slow and steady inhalation	**Metered Dose Inhaler (MDI)**	**Salbutamol** 100mcg 2 puffs prn (£1.50) **or** **Salamol Easibreathe®** 100mcg 2 puffs prn (£6.30) **or** **Ipratropium** 20mcg 1-2 puffs PRN (£5.56)		**Bevespi® Aerosphere** (glycopyrronium/formoterol) 7.2/5mcg TWO doses BD (£32.50)	**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)	**Trimbow®** (beclometasone extrafine/ formoterol/glycopyrronium) **87/5/9mcg** TWO puffs BD via spacer (£44.50)
	Respimat soft mist inhaler (SMI)		**Spiriva®** (tiotropium) 2.5mcg TWO puffs OD (£23) **	**Spiolto®** (tiotropium/olodaterol) 2.5/2.5mcg TWO puffs OD (£32.50) **		
Dry Powder inhaler (DPI) — quick and deep inhalation	**Easyhaler**	**Salbutamol** 100mcg 2 doses PRN (£3.31)			**Fobumix®** (budesonide/formoterol) **160/4.5mcg** TWO doses BD **or** **320/9mcg** ONE dose BD (£21.50)	
	Handihaler		**Spiriva®** (tiotropium) 18mcg ONE dose OD (£33.50 **			
	Turbohaler	**Terbutaline** (Bricanyl®) 500mcg 1 dose PRN (£8.30)			**Symbicort®** (budesonide/formoterol) **200/6mcg** TWO doses BD **or** **400/12mcg** ONE dose BD (£28)	
	Genuair		**Eklira®** (aclidinium) 322mcg ONE dose BD (£32.50)	**Duaklir®** (aclidinium/formoterol) 340/12mcg ONE dose BD (£32.50)		
	Ellipta		**Incruse®** (umeclidinium) 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)	**Trelegy®** (fluticasone furoate/ umeclidinium/vilanterol) **92/55/22mcg** ONE dose OD (£44.50)
	NEXThaler				**Fostair®** (beclometasone extrafine/ formoterol) **100/6mcg** TWO doses BD (£29.32)	**Trimbow®** (beclometasone extrafine/ formoterol/glycopyrronium) **88/5/9mcg** TWO doses BD (£44.50)
	Zonda		**Braltus®** (tiotropium) 10mcg ONE dose OD (£25.80) **			

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.
Minimise the number of inhalers and number of different types of inhaler used by each patient as far as possible.
Consider carbon footprint –note that DPIs and SMIs have a much lower carbon footprint than MDIs. Use low carbon option where drug choices/devices are equally appropriate, however, ensuring the patient is able to use the device effectively must always be the priority. For further information regarding environmental impact of respiratory disease management see PCRS Position Statement

*Existing patients who are stable on LAMA (or LABA) alone can continue until appropriate to change

**Caution if CrCl ≤50ml/min-consider alternative

Review inhaled corticosteroid (ICS) appropriateness in all patients on ICS/LABA or triple therapy

During COVID-19 NICE recommends to continue ICS and to delay any planned trials of withdrawal.

Inhaled corticosteroids are associated with side effects including pneumonia and therefore are only recommended for COPD patients at high risk of exacerbation and/or with features of asthma. Increasing evidence suggests that high dose ICS can cause harm in patients with COPD without any further clinical benefit than moderate doses.

Does the patient have a diagnosis of asthma or a documented indication for high dose ICS?

Yes → **Continue ICS**

No ↓

Is the patient on high dose ICS ? Eg:

MDI Fostair 200/6 TWO puffs BD*
Seretide 250 evohaler TWO puffs BD*
Sirdupla 250 TWO puffs BD*

DPI Fobumix Easyhaler 320/9 TWO doses BD*
Symbicort Turbohaler 400/12 TWO doses BD*
Relvar Ellipta 184/22 ONE dose OD*
Fostair NEXThaler 200/6 TWO doses BD*
Duoresp Spiromax 320/9 TWO doses BD*
Seretide accuhaler 500 ONE dose BD
Airflusal Forspiro 500/50 ONE dose BD

* Dose or device unlicensed in COPD

Patients on high dose ICS should carry a steroid treatment card. Follow link for how to obtain supplies.

Yes → **Step down to moderate dose ICS using a formulary ICS/LABA as listed in table on p2**

Watch for emerging symptoms—patient must contact prescriber if worsening of symptoms.

Review after 4 weeks.

If stable on moderate dose ICS for 4 weeks

No ↓

Review whether ICS is still indicated

Does the patient have any features of asthma?

- Previous secure diagnosis of asthma/atopy
- Higher eosinophil count
- Substantial variation in FEV1 over time (≥400ml) or substantial diurnal variation in PEFR (≥20%) **or**

Has the patient had 1 severe (requiring hospitalisation) or 2 moderate (requiring oral steroids/antibiotics) exacerbations within a year? **or**

Were the above exacerbation criteria met when the patient started ICS? **or**

Has the patient had a 3 month trial of triple therapy and the reason for continued ICS treatment been documented in the clinical records ?

Yes → **Continue ICS**

No ↓

Consider stopping ICS

NB: Do not withdraw ICS if patient has mixed COPD/asthma diagnosis or if patient known to have raised eosinophil count

Moderate dose ICS can be stopped without weaning. For higher doses, reduce to moderate dose for 4 weeks before considering stopping as above.

Stop moderate dose ICS/LABA (also stop LAMA if prescribed) and start LAMA/LABA

If changing inhaler device, ensure patient is taught correct inhaler technique

Watch for emerging symptoms—patient must contact prescriber if worsening of symptoms.

Review after 4 weeks. Reassess need for ICS if patient has an exacerbation or worsening symptoms. Spirometry may be necessary in these cases.

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Follow up

Review response at next routine COPD review or sooner if required.