

LSCMMG Chronic Obstructive Pulmonary Disease (COPD) Desktop Guideline

Version 1.9 – December 2023

VERSION CONTROL		
Version	Date	Amendments made
1.0	March 14	
1.2	February 15	Updated to include Spiriva Respimat
1.3	March 2015	Link added to MHRA safety update re: tiotropium
1.4	October 2015	LABA, LAMA & LABA/LAMA inhalers updated
1.5	September 2017	GOLD principles included
1.6	Consultation Sept-Oct 2017	Non-inhaler section updated and consolidation with long-acting inhaler section v1.5
1.6.1	March 2018	Addition of Trelegy Ellipta to device pathway
1.7	May 2018	Version number corrected
1.8	March 2019	Treatment algorithms updated to reflect NICE NIG115 (2018) and GOLD (2019)
1.9	December 2023	Updated to reflect GOLD 2023 report and Green Agenda

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Glossary

GOLD – Global initiative for chronic obstructive lung disease

LABA – long acting beta agonists

LAMA – long acting muscarinic antagonist

ICS – inhaled corticosteroid

SABA – short acting beta agonists

MDI – metered dose inhaler

DPI – dry powder inhaler

HOSAR – home oxygen service – assessment and review

EPACCS – electronic palliative care coordination systems

VA/Q – ventilation perfusion

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Introduction

Background Information and the Rationale for Guideline Development

This guideline has been updated in line with the GOLD 2023 report, including:

- a revision of the ABCD assessment tool (now ABE tool),
- the changed positioning of (LABA + LAMA) and (LABA + ICS) in initial treatment,
- updated definitions of COPD and COPD exacerbations

The goals for treatment of COPD exacerbations are to minimise the negative impact of the current exacerbation and to prevent subsequent events.

These updated guidelines also acknowledge existing NICE Guidance NG115 which recommends to:

- Start inhaled therapies **only** if the non - pharmacological interventions i.e., Non inhaler considerations, have been offered (if appropriate).
- Minimise the number of inhalers and the number of different types of inhalers used by each person as far as possible.
- Ensure people receive inhalers they have been trained to use (for example, by specifying the brand in prescriptions).

These are treatment guidelines only

Key Points To Consider When Prescribing

1. Blood eosinophil count (eos)

- At present blood eosinophil counts (eos) ≥ 300 cells / μ l provide guidance to identify COPD patients at higher risk of exacerbations and therefore more likely to benefit from preventive treatment with inhaled corticosteroids (ICS).
- Data modelling indicates that ICS-containing regimens have little or no effect at an eos count < 100 cells / μ l and therefore this threshold can be used to identify patients with a low likelihood of treatment benefit with ICS.
- The treatment effect of ICS-containing regimens is higher in patients with a high exacerbation risk (≥ 2 exacerbations or ≥ 1 leading to hospital admission) and therefore the use of eos to predict ICS effects should always be combined with a clinical assessment of the exacerbation risk.

2. Inhaler Device / Technique

- The choice of inhaler device should be individually tailored to the patient (ones the patient can and will use effectively) with preference being given to those with a low carbon footprint ie dry powder inhalers
- Try to use the same delivery device for each inhaled drug and minimise the number of inhalers used by each patient as far as possible ie combination inhalers
- Education and training in inhaler device technique is of utmost importance.
- Inhaler technique should be assessed at each visit.
- Inhaler technique (and adherence to all therapy, including non-pharmacological interventions) should be assessed before concluding that the current therapy is insufficient.
- **Be aware of potential duplication** of inhaler ingredients especially LAMA/LABA combinations
- Where an MDI device is clinically appropriate, provide one with a lower carbon footprint and consider provision of appropriate spacer device.

3. Inhaler Therapy

- Use of a combined single inhaler therapy is more convenient and effective than multiple inhalers & reduces the environmental impact.
- LABAs and LAMAs are preferred over short acting agents (SABA), except for
 - patients with only occasional dyspnoea and
 - the immediate relief of symptoms in those patients already on long acting (LABAs and LAMAs) bronchodilators for maintenance therapy.

Over-use of SABA i.e., more than 2 inhalers / year, should be investigated and the patient should be transitioned to long-acting agents where appropriate. Use of LABA + ICS in COPD is not now encouraged ¹. If there is an indication for an ICS, then LABA + LAMA + ICS has been shown to be superior to LABA + ICS and is therefore the preferred choice.

- If a patient with COPD and no features of asthma, has been treated with LABA + ICS and :
 - Is **'Well-controlled'** - in terms of symptoms and exacerbations, continuation with LABA + ICS is an option **OR**
 - **If patient has further exacerbations** - treatment should be escalated to LABA + LAMA + ICS **OR**
 - Has **Major symptoms** - switching to LABA + LAMA should be considered.
- If patients with COPD have concomitant asthma, they should be treated like patients with asthma. **Under these circumstances the use of an ICS is mandatory.**

4. Environmental Impact 'Green' Agenda

- Inhalers make up 3% of all NHS carbon emissions.
- A DPI should be the first choice for inhaled therapy, if clinically appropriate.
- Choose the more environmentally friendly option, to help to cut the NHS carbon footprint.
- If an MDI is required, then an MDI with the lowest carbon emissions / recycling potential should be used.
- Data on the carbon footprint of individual inhalers is very limited and provide indicative rather than actual values. Estimated figures based on usual daily doses and median CO₂e values per inhaler can be found at <https://www.prescqiipp.info/umbraco/surface/authorisedmediasurface/index?url=%2fmedia%2f6213%2finhaler-carbon-footprint-comparison-tool-21.pdf>

Non-inhaler considerations

NICE NG115 (2018) says to start inhaled therapies only if the non - inhaler interventions, have been offered (if appropriate)

LIFESTYLE ADVICE

- **Smoking intervention at every opportunity**, refer to your local smoking cessation service.
- Dietary advice- If BMI < 18 or > 30 (For obesity grading I – III refer to dietician)
- Exercise – promote gentle exercise / pulmonary rehab.
- Reduce where possible exposure to indoor and outdoor air pollution.

IMMUNISATION

- Influenza, annually
- Pneumococcal, as per green book
- COVID -19, as per national recommendations
- Pertussis and Shingles, as per local recommendation

COMORBIDITIES

Look for and treat common co-morbidities such as:

- **Heart failure**
- **Osteoporosis**
- **Anxiety/depression**

PULMONARY REHABILITATION

Refer patients with exercise limitation due to breathlessness for pulmonary rehabilitation. Refer as per local arrangements e.g., Community COPD Team, LSCFT

THEOPHYLLINE

Theophyllines should **only** be used after a trial of short-acting bronchodilators and long-acting bronchodilators, or in patients who are unable to use inhaled therapy, as there is a need to monitor plasma levels and interactions.

CHRONIC PRODUCTIVE COUGH

Consider a 4-week trial of a mucolytic carbocysteine 375mg - 2 capsules 3 times/ day reducing to 2 capsules twice daily if good response or N -acetylcysteine 600mg effervescent tablets once daily. Continue only if symptomatic benefit.

Do not use to prevent exacerbations.

LONG TERM OXYGEN

Refer patients with stable COPD and persistent oxygen saturation of <92% for oxygen assessment.

However, please discuss with local HOSAR team before referring active smokers (NG115 section 1.2.61)²

ADVANCED DISEASE

If the patient meets Gold Standard Framework criteria:

- Ensure registered on EPACCS
- Initiate advanced care planning
- Identify preferred place of care
- Discuss Community DNA-CPR if appropriate
- Consider referral to Palliative Care Services, for complex symptom management support

ASSESS / OPTIMISE TREATMENT

Ask the patient the following:

- Has the treatment made a difference?
- Is breathing easier in any way?
- Has sleep improved?
- Can they do some things that they could not do before or do the same things faster?
- Are they less breathless than before when doing things?
- Inhaler technique should be assessed at each visit.

Exacerbations

An exacerbation of COPD is defined as an event characterised by dyspnoea and / or cough and sputum that worsen over <14 days

Exacerbations of respiratory symptoms in patients with COPD can be triggered by a several different factors (alone or in combination), including respiratory infections, environmental pollutants or unknown factors. During exacerbations there is evidence of increased airway and systemic inflammation, increased gas trapping and hyperinflation with reduced expiratory flow and worsening of VA/Q abnormalities. Other conditions, such as pneumonia, pulmonary and / or heart failure may mimic or aggravate an exacerbation of COPD and need to be considered in the clinical management of these episodes.

Pharmacological therapy can reduce COPD symptoms, reduce the frequency and severity of exacerbations and improve health status and exercise tolerance.

The goals for treatment of COPD exacerbations are to minimise the negative impact of the current exacerbation and to prevent subsequent events.

Symptoms include **increased mucus production, increased sputum purulence and volume, increased cough and wheeze, dyspnoea.**

For severe breathlessness or rapid onset of breathlessness:

- Increase frequency of short acting bronchodilator MDI i.e., Salbutamol or Ipratropium via spacer as per patient plan
- Prednisolone tablets 30mg each morning for 5 days¹

For purulent sputum production:

- Follow your local antibiotic guidelines – duration of therapy should normally be 5 days.
- Prophylactic antibiotics are **NOT** recommended unless initiated by a specialist.

Refer patients with >1 exacerbation/year to Acute Respiratory Virtual Ward (ARVW) / community COPD team for admission avoidance / self-management plan. Where possible refer patients whilst exacerbating.

Guidance on Rescue Packs – See Appendix 1

Refer to specialist when there is:

- Diagnostic uncertainty – ensure patient has undergone spirometry
- Uncontrolled severe COPD
- Onset of cor pulmonale
- Nebuliser assessment is needed (**please ensure inhaler therapy has been assessed and optimised and that patient is concordant, before referral**)
- Symptoms don't match lung function tests
- Aged <40 or family history of alfa 1 antitrypsin deficiency
- Frequent infection
- Rapid decline in FEV₁

USEFUL RESOURCES

NICE: www.nice.org.uk

GOLD: www.goldcopd.com

Patient information leaflets: www.patient.co.uk

GP airways group: www.gpiag.org

British Thoracic Society: www.brit-thoracic.org.uk

BNF: www.bnf.org

Green Book, can be found in Publications on www.dh.gov.uk

CAT Scores: <http://www.catestonline.co.uk/>

Asthma and Lung UK: www.asthmaandlung.org.uk/

Right Breathe: <https://www.rightbreathe.com/>

LSCMMG COPD management pathway

following confirmation of diagnosis with spirometry

Fundamentals of COPD care

- Offer treatment and support to stop smoking
- Offer recommended vaccinations
- Offer pulmonary rehabilitation if indicated
- Co-develop a respiratory action plan
- Optimise treatment for co-morbidities

Start inhaled therapy only if:

- All the above fundamentals of COPD care have been offered (if appropriate) and
- Inhaled therapies are needed to relieve breathlessness or exercise limitation

Before escalating to a next stage in treatment, check the patients' inhaler technique, compliance with administration instructions and tolerance of the current device. If a patient is unable to use a particular device satisfactorily, then an alternative device should be sought.

Choice of inhaler should be based on patient tolerance, ease of use and environmental impact of the device.
DPI inhalers are preferred if clinically appropriate

Offer SABA (to use if required).

Can be continued through all stages of symptoms

Patient is limited by symptoms or has exacerbations despite treatment

Asthmatic features or features suggesting steroid responsiveness? ^a

No

Yes

Offer LABA+LAMA (in a single inhaler)

e.g., Anoro Ellipta, Duaklir Genuair, Ultibro Breezhaler, Spiolto Respimat (soft mist), Bevespi Aerosphere (MDI)

Consider LABA + ICS ^b (in a single inhaler)

e.g., Relvar Ellipta, Fostair 100/6 NEXThaler, Symbicort 200/6 or 400/12 Turbohaler, Fobumix Easyhaler, Fostair 100/6 (MDI), Luforbec 100/6 (MDI), Symbicort 200/6 (MDI)

Patient still limited by symptoms?

Patient has 1 severe or 2 moderate exacerbations within a year?

Patient still limited by symptoms OR has 1 severe or 2 moderate exacerbations within a year?

Yes

Yes

Yes

CONSIDER 3-month trial of LAMA + LABA + ICS ^{b,c} in a combination inhaler. If no improvement revert to LABA + LAMA

LAMA + LABA + ICS ^{b,c} (as a combination inhaler)

E.g., Trelegy Ellipta, Trimbow NEXThaler, Trimbow (MDI), Trixeo Aerosphere (MDI)
 If symptoms do not improve, consider stepping down and refer for specialist opinion

^a asthmatic features/ features suggesting steroid responsiveness include any previous diagnosis of asthma or atopy, a blood eos >300, substantial variation in FEV1 over time (at least 400ml) or substantial diurnal variation in PEF (at least 20%)

^b Be aware of an increased risk of side effects (including pneumonia) in patients taking ICS.

^c Document in clinical records the reason for continuing ICS treatment

Green text indicates low CO2 emissions, Red text indicates high CO2 emissions.

References

The Medicines Management Team at MLCSU would like to thank all clinicians and commissioners in the Lancashire and South Cumbria Health Economy who provided valuable insight which was essential in the development of this guideline.

This guidance does not override the individual responsibility of health professionals to make decisions in exercising their clinical judgement in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer. For full prescribing information please refer to the BNF and SPC.

References

¹ GOLD 2023 report <https://goldcopd.org/2023-gold-report-2/>















² NICE guideline [NG115]: Chronic obstructive pulmonary disease in over 16s: diagnosis and management <https://www.nice.org.uk/guidance/ng115>

³ [Inhaler prescribing errors–do they matter? Rachel Wilson, Helen Iddon, Julie Lawson & Victoria Birchall. Midlands and Lancashire Commissioning Support Unit \(MLCSU\) / Lancashire and South Cumbria Integrated Care Board \(ICB\) Presentations - MLCSU Medicines Management and Optimisation Services \(midlandsandlancashirecsu.nhs.uk\)](#)









Inhalers licensed for the treatment of COPD

A DPI should be the first choice for inhaled therapy, if clinically appropriate





*If a patient with COPD and no features of asthma has been treated with ICS + LABA and is well controlled in terms of symptoms and exacerbations, continuation with ICS + LABA is an option - see inhaler device / technique section above.

DPI	LAMA + LABA	ICS + LABA (concomitant asthma)	ICS + LAMA + LABA
<p>Ellipta</p> 	<p>Anoro Ellipta (Umeclidinium + Vilanterol)</p> 	<p>Relvar Ellipta (Fluticasone + Vilanterol)</p> 	<p>Trelegy Ellipta (Fluticasone + Umeclidinium + Vilanterol)</p> 
<p>Genuair</p> 	<p>Duaklir Genuair (Acidinium + Formoterol)</p> 		
<p>Breezhaler</p> 	<p>Ultibro Breezhaler (Glycopyrronium + Indacaterol)</p> 		
<p>NEXThaler</p> 		<p>Fostair 100/6 NEXThaler (Beclometasone + Formoterol)</p> 	<p>Trimbow NEXThaler (Beclometasone + Glycopyrronium + Formoterol)</p> 
<p>Turbohaler</p> 		<p>Symbicort 200/6 or 400/12 Turbohaler (Budesonide + Formoterol)</p>  	

Inhalers licensed for the treatment of COPD

DPI	LAMA + LABA	ICS + LABA (concomitant asthma)	ICS + LAMA + LABA
<p>Easyhaler</p> 		<p>Fobumix 160/4.5 or 320/9 Easyhaler (Budesonide + Formoterol)</p>  	
Soft Mist	LAMA + LABA	ICS + LABA (concomitant asthma)	ICS + LAMA + LABA
<p>Respimat</p> 	<p>Spiolto Respimat (Tiotropium + Olodaterol)</p> 		
MDI	LAMA + LABA	ICS + LABA (concomitant asthma)	ICS + LAMA + LABA
<p>Aerosphere</p> 	<p>Bevespi Aerosphere (Glycopyrronium + Formoterol)</p> 		<p>Trixeo Aerosphere (Budesonide + Glycopyrronium + Formoterol)</p> 

Inhalers licensed for the treatment of COPD

MDI	LAMA + LABA	ICS + LABA (concomitant asthma)	ICS + LAMA + LABA
<p>Standard MDI device</p> 		<p>Fostair 100/6 (Beclometasone + Formoterol)</p>  <p>Luforbec 100/6 (Beclometasone + Formoterol)</p> 	<p>Trimbow (Beclometasone + Glycopyrronium + Formoterol)</p> 

SABA to be used only if required (over-use should be investigated)

DPI	SABA
<p>Turbohaler</p> 	<p>Bricanyl 500 Turbohaler (Terbutaline)</p> 
MDI	SABA
<p>Autohaler</p> 	<p>Airomir Autohaler (Salbutamol)</p> 
<p>Standard MDI device</p> 	<p>Airomir Inhaler (Salbutamol)</p> 

Appendix 1

COPD – Guidance on ‘Rescue Packs’ (for appropriate patients) to manage exacerbations.

(Refer to local/practice protocol if available)

The effectiveness of patients having a rescue pack on standby at home, is much debated. The risk of inappropriate use needs to be balanced with timely intervention to avoid an admission to hospital.

Exacerbation symptoms include: increased mucus production, increased sputum purulence and volume, increased cough and wheeze, dyspnoea

Prescriber action

The options are:

1. Provide a Rescue Pack to the patient to keep at home to enable them to initiate treatment as soon as possible.
2. Offer a same day triage with the ‘pack’ ready to prescribe (acute item **NOT a repeat**), on the patients record, which is also visible to out of hours clinicians.
3. Consider a ‘Rescue Pack’ for those patients who:
4. Have had one exacerbation of COPD in the last 12 months
5. Are at risk of further exacerbations
6. Have been recommended to have one by the respiratory specialist
7. Are motivated to self-manage, can identify symptoms of flare-up, and is educated on how to use the pack.

Non-infective exacerbation:

Short course of oral corticosteroid: ***Prednisolone tablets 5mg tablets – Six tablets (30mg) once daily for 5 days.***

Infective exacerbation:

Course of antibiotics - First line options:

- ***Amoxicillin 500mg Capsules X 15. One capsule 3 times a day for 5 days maximum***
- ***Doxycycline 100mg capsules X 6. Two capsules (200mg) immediately then 100mg daily thereafter for 5 days***
- ***Clarithromycin 500mg tablets x 10. One tablet twice a day for 5 days***

For further information: [Antibiotic and diagnostic quick reference tools: Summary of antimicrobial prescribing guidance - managing common infections \(rcgp.org.uk\)](#)

Patient action

Initial action:

Use reliever inhaler as per Personal COPD Action Plan.

If 2 or more further symptoms over the next 24 hours despite increased inhaler use, start/request rescue pack.

When to seek advice or help:

- When first experiencing symptoms, contact the GP practice to request a rescue pack **OR** as soon as the steroid and/or antibiotic are started.
- Contact the GP practice if no improvement after 2-3 days.

If severe symptoms persist, contact the GP practice, or dial 999.

Severe symptoms include:

Severe Breathlessness, chest pain, high fever/temperature, agitation, drowsiness or confusion.