Algorithm for the use of inhaled therapies in COPD

Version 2 – May 2017

This document has been revised by the Berkshire West Respiratory Network to support clinicians in selecting the most appropriate, cost effective treatments for patients with Chronic Obstructive Pulmonary Disease. Over the last 2 years a number of new drug molecules, drug combinations, devices and branded generics have entered the market and as such it was consider appropriate to review the guidance issued in December 2015. ***Patients with co-existing Asthma and COPD may need to be managed differently and advice should be sought from the relevant specialist teams, if needed.***

Since the original guidance was issued the Global Initiative for Chronic Obstructive Lung Disease (GOLD) has updated it's guidelines with an aim to move COPD treatment towards more individualised medicine. The ABCD assessment tool which they introduced in 2011 to determine the severity of patients' COPD has been updated, the FEV1 component has been removed and severity is now exclusively informed by a patient's symptoms and exacerbation history. As the NICE guidance is now significantly out of date and does not recognise some of the new combination therapies this guidance has been reviewed using the updated GOLD classifications.

The algorithm is intended for use when initiating new treatments due to disease progression and not intended to be used for switching patients from their existing treatment, unless the patient is uncontrolled or struggling to use their current treatment/device. A validated questionnaire, such as the COPD Assessment Test (CAT) should be used to assess individual patient symptoms.

This algorithm recommends the use of locally preferred agents as first or second line choices. However if the patient cannot tolerate or use the preferred agents the most appropriate alternative within the recommended class(es) of drug should be prescribed.

Key points to consider for all patients at all stages:

- Offer referral to a smoking cessation service to any person with Respiratory Disease, including COPD, who continues to smoke.
- Offer the pneumococcal vaccination and annual influenza vaccination as recommended by NICE.
- Refer to Pulmonary Rehabilitation especially if the MRC grade is **3** or above.
- Check inhaler technique with every device used, **at every opportunity**.
- If the patient is using a metered dose inhaler (MDI), treatment is much more effective if used with a spacer device, especially in exacerbations. Ensure every patient with COPD has a spacer to use if they use an MDI and knows how to use it.
- All new inhaler treatments should be assessed for effect on symptoms after a trial period (e.g. using CAT scores) and treatment should be withdrawn if no benefit is being demonstrated.
- Before stepping up therapy explore reasons for treatment failure. Check the PMR for ordering frequencies and confirm expected usage vs actual usage with the patient.

Inhaler technique

Poor inhaler technique is a very common cause of treatment failure. All clinicians involved in the management of patients with COPD should ensure that they know the correct inhaler technique for any device that their patients are using. It is important to ensure that patients are regularly asked to demonstrate how they use their different devices and that the clinician is able to correct the technique as appropriate. This is especially important when assessing if a treatment has been ineffective.

This document has been adapted for local use from the COPD Management in Primary Care – Inhaled Therapies produced by Oxfordshire Clinical Commissioning Group and the Algorithm for use of inhaled therapies in COPD produced by the Southwark and Lambeth Clinical Commissioning Groups.

PrescQIPP have produced videos that demonstrate good inhaler technique for all the devices currently on the market, these can be accessed using the link below:

https://www.prescqipp.info/respiratory#inhaler-technique-assessment-view-videos-and-implementation-guides

If a patient is unable to use a particular device then an alternative option from the algorithm, where possible, should be prescribed. Patients should not have their therapy stepped up before they have tried alternative devices that contain medications from the same class, unless the severity of their disease has worsened.

There are a number of devices available to support improvements in inhaler technique, "In-check DIAL" for clinicians and "2Tone Trainer" for patients. These devices are not available on the NHS.

The MRC Breathlessness Scale

Grade of dyspnoea	Description
1	Not troubled by breathlessness except on strenuous exercise
2	Shortness of breath when hurrying on the level *or* walking up a slight hill
3	Walks slower than most people on the level, stops after a mile or so, or stops after 15 minutes walking at own pace.
4	Stops for breath after walking about 100m *or* after a few minutes on the level
5	Too breathless to leave the house *or* breathless when dressing or undressing

CAT Score

CAT Test Form.pdf

*Tiotropium dry powder inhalers

The two products currently available on the market, Braltus Zonda and Spiriva Handihaler have the same delivered dose of 10mcg. No dose adjustment is required and these products are interchangeable.

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Your name:

Today's date:

CAT
COPD Assessment Test

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional measure the impact COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers, and test score, can be used by you and your healthcare professional to help improve the management of your COPD and get the greatest benefit from treatment.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

Example: I am very happy 0 X 2 3 4 5 I am very sad

			SCORE
I never cough	0 1 2 3 4 5	**I cough all the time**	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	**My chest is completely full of phlegm (mucus)**	
My chest does not feel tight at all	0 1 2 3 4 5	**My chest feels very tight**	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5	**When I walk up a hill or one flight of stairs I am very breathless**	
I am not limited doing any activities at home	0 1 2 3 4 5	**I am very limited doing activities at home**	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	**I am not at all confident leaving my home because of my lung condition**	
I sleep soundly	0 1 2 3 4 5	**I don't sleep soundly because of my lung condition**	
I have lots of energy	0 1 2 3 4 5	**I have no energy at all**	

TOTAL SCORE

Algorithm for the use of inhaled therapies in COPD using a flow chart format

Patients with co-existing Asthma and COPD may need to be managed differently. This algorithm is intended for the management of patients with pure COPD only.

Mild

- Few symptoms CAT <10 and MRC 1-2

and/or

- 1 exacerbation and no hospital admissions in 12 months

Short Acting Beta Agonist (SABA) or Short Acting Antimuscarinic when required.

Salbutamol 100mcg/dose (MDI preferred, with a spacer for greater effectiveness) – *TWO puffs when required up to four times a day*

Alternative Option:

Easyhaler® Salbutamol 100mcg/actuation (dry powder) – *TWO puffs when required up to four times a day*

Evaluate the effect of treatment – Continue, stop or try an alternative class of bronchodilator.

Where a patient is using their SABA more than 4 times a day, treatment should progress to the next stage or advice should be sought from the specialist teams.

Moderate

- Increasing symptoms CAT ≥10 and MRC ≥ 3

or

- ≥2 exacerbation per year or 1 hospital admission in 12 months

Increasing severity

Regular Long Acting Antimuscarinic Agent (LAMA.
Continue SABA prn. Discontinue SAMA if in use.
If the patient experiences no response to the first agent after 4 weeks try an alternative LAMA before trialling a LABA alone.

1st line: Tiotropium 10mcg * OR Tiotropium 2.5mcg	1 inhalation once daily 2 inhalations once daily
Alternative LAMA Option: Incruse® Ellipta®▼ (Umeclidinium 55mcg)	1 inhalation daily

Alternative option where a LAMA is unsuitable (side effects, no benefit or contraindicated):
Offer Long Acting Beta$_2$ Agonist (LABA). Continue SABA prn.

Easyhaler® Formoterol 12mcg	12mg daily or twice daily

If there has been some response to a single agent LAMA / LABA but the patient is still symptomatic or continues to exacerbate: **Offer a LAMA + LABA combination. Continue SAB**A prn.

Anoro® Ellipta®▼ (Umeclidinium 55mcg and Vilanterol 22mcg)) – *ONE inhalation once daily*

Spiolto Respimat® ▼ (Tiotropium 2.5mcg and Olodaterol 2.5mcg) – *Two puffs once daily*

Severe and very severe

- Frequent symptoms CAT ≥10 and mMRC ≥3

and

- ≥2 exacerbation per year or 1 hospital admission in 12 months

If all other treatment options have been tried (including pulmonary rehab) and the patient is still symptomatic and/or exacerbating frequently: **Offer Inhaled Corticosteroid/LABA + LAMA (this should be the most cost effective single agent LAMA). Continue SABA prn.**

Fostair 100/6® MDI or NEXThaler (Beclometasone 100mcg and Formoterol 6mcg) – *Two puffs twice daily*
(The patient should have a spacer with the MDI device for greater effectiveness)
OR
Relvar® Ellipta® 92micrograms/22 micrograms (Fluticasone fuorate 92mcg and Vilanterol 22mcg) – *ONE inhalation once daily*

Be aware of the potential to develop side effects (including non-fatal pneumonia) in people with COPD treated with ICS and be prepared to discuss this with patients.

Note this algorithm lists the locally preferred treatment options. However, if the patient cannot tolerate or use the listed inhaler device, the most appropriate alternative within the recommended class(es) of drugs should be prescribed.

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NHS Newbury and District Clinical Commissioning Group | NHS North and West Reading Clinical Commissioning Group | NHS South Reading Clinical Commissioning Group | NHS Wokingham Clinical Commissioning Group

Algorithm for the use of inhaled therapies in COPD using the GOLD Guidelines format

Patients with co-existing Asthma and COPD may need to be managed differently. This algorithm is intended for the management of patients with pure COPD only.

INCREASING EXACERBATIONS OR HOSPITAL ADMISSIONS

HIGH RISK – Exacerbation History ≥2 exacerbations or 1 hospital admissions in 12 months

GOLD Category C (Low symptoms and High exacerbations)

LAMA+LABA – Options

Continue SABA prn.

Anoro® Ellipta®▼ (Umeclidinium 55mcg and Vilanterol 22mcg)) – *ONE inhalation once daily*

Spiolto Respimat®▼ (Tiotropium 2.5mcg and Olodaterol 2.5mcg) – *Two puffs once daily*

If there has been some response to a single agent LAMA but the patient has further exacerbations offer a LAMA +LABA combination. Continue SABA prn.

LAMA

Continue SABA prn. Discontinue SAMA if in use.

1st line: Tiotropium 10mcg*– *ONE inhalation once daily* ***OR*** Tiotropium 2.5mcg – *TWO inhalations once daily*

Alternative LAMA Option:

Incruse® Ellipta®▼ (Umeclidinium 55mcg) – *ONE inhalation daily*

GOLD Category D (High symptoms and High exacerbations)

ICS/LABA + LAMA - Options

If all other treatment options have been tried (including pulmonary rehab) and the patient is still symptomatic and exacerbating frequently, offer an ICS/LABA combo **plus** LAMA. **Continue SABA prn.**

Fostair 100/6 ® MDI or NEXThaler (Beclometasone 100mcg and Formoterol 6mcg) – *TWO puffs twice daily. (The patient should have a spacer with the MDI device for greater effectiveness)*

Relvar® Ellipta® 92micrograms/22 micrograms (Fluticasone fuorate 92mcg and Vilanterol 22mcg) – *ONE inhalation daily.*

Plus the most cost effective single agent LAMA

Be aware of the potential to develop side effects (including non-fatal pneumonia) in people with COPD treated with ICS and be prepared to discuss this with patients.

LOW RISK – Exacerbation History 1 exacerbation and no hospital admissions in 12 months

GOLD Category A (Low symptoms and Low exacerbations)

Continue, stop or try alternative class of bronchodilator.

(Where a patient is using their SABA more than 4 times a day, treatment should progress to the next stage or advice should be sought from the specialist teams)

Evaluate the effect of treatment

SABA or SAMA when required.

1st line: Salbutamol 100mcg/dose – *TWO puffs when required up to four times a day* (MDI preferred, with a spacer)

Alternative Options:

Easyhaler® Salbutamol 100mcg/actuation (dry powder) – *TWO puffs when required up to four times a day*

GOLD Category B (High symptoms and Low exacerbations)

LAMA+LABA - Options

Anoro® Ellipta ▼ (Umeclidinium 55mcg and Vilanterol 22mcg)) – *ONE inhalation once daily*

Spiolto Respimat®▼ (Tiotropium 2.5mcg and Olodaterol 2.5mcg) – *Two puffs once daily*

If there has been some response to a single agent but the patient has persistent symptoms offer a LAMA +LABA combination. Continue SABA prn

LAMA or LABA

Continue SABA prn. Discontinue SAMA if in use. If the patient experiences no response to the first agent after 4 weeks try a second LAMA before trialling a LABA alone.

1st line LAMA: Tiotropium 10mcg*– *ONE inhalation once daily* ***OR*** Tiotropium 2.5mcg – *TWO inhalations once daily*

Alternative LAMA Option:

Incruse® Ellipta▼ (Umeclidinium 55mcg) – *ONE inhalation daily*

LABA option where a LAMA is unsuitable (side effects, no benefit or contraindicated):

Easyhaler® Formoterol 12mcg – *12mg daily or twice daily*

START

Less Symptoms (CAT < 10 & MRC 1-2)

More Symptoms (CAT ≥10 & MRC ≥3)

INCREASING SYMPTOMS

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Preferred inhaled therapies in COPD using the GOLD Guidelines format

To be used in conjunction with the full algorithm

INCREASING EXACERBATIONS OR HOSPITAL ADMISSIONS

GOLD Category C (Low symptoms and High exacerbations)

LAMA+LABA – Options. Continue SABA prn.

Anoro® Ellipta ▼ (Umeclidinium 55mcg and Vilanterol 22mcg))
ONE inhalation once daily

Spiolto Respimat®▼ (Tiotropium 2.5mcg and Olodaterol 2.5mcg)
Two puffs once daily

LAMA

Continue SABA prn. Discontinue SAMA if in use.

1st line: Tiotropium 10mcg*– *ONE inhalation once daily* ***OR***
Tiotropium 2.5mcg – *TWO inhalations once daily*

Alternative LAMA Option:
Incruse® Ellipta®▼ (Umeclidinium 55mcg) - *ONE inhalation daily*

GOLD Category D (High symptoms and High exacerbations)

ICS/LABA + LAMA – Options. Continue SABA prn.

Fostair 100/6 ® MDI or NEXThaler
(Beclometasone 100mcg and Formoterol 6mcg) – *TWO puffs twice daily.*
(With spacer)

Relvar® Ellipta® 92micrograms/22 micrograms
(Fluticasone fuorate 92mcg and Vilanterol 22mcg) – *ONE inhalation daily.*

Plus the most cost effective single agent LAMA

GOLD Category A (Low symptoms and Low exacerbations)

SABA or SAMA when required.

1st line: Salbutamol 100mcg/dose – *TWO puffs when required up to four times a day* (MDI preferred, with a spacer)

Alternative Options:
Easyhaler® Salbutamol 100mcg/actuation (dry powder) –
TWO puffs when required up to four times a day

GOLD Category B (High symptoms and Low exacerbations)

LAMA+LABA - Options

Anoro® Ellipta▼ (Umeclidinium 55mcg and Vilanterol 22mcg)
ONE inhalation once daily
Spiolto Respimat®▼ (Tiotropium 2.5mcg and Olodaterol 2.5m
Two puffs once daily

LAMA or LABA

Continue SABA prn. Discontinue SAMA if in use.
1st line LAMA: Tiotropium 10mcg*- *ONE inhalation once daily*
Tiotropium 2.5mcg – *TWO inhalations once dail*

Alternative LAMA Option:
Incruse® Ellipta▼ (Umeclidinium 55mcg) – *ONE inhalation dai*

LABA option where a LAMA is unsuitable
Easyhaler® Formoterol 12mcg – *12mg daily or twice daily*

INCREASING SYMPTOMS

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