

Non-pharmacological management for ALL patients



Smoking Cessation



Annual Flu Vaccination



Pulmonary Rehabilitation



Increase daily activity



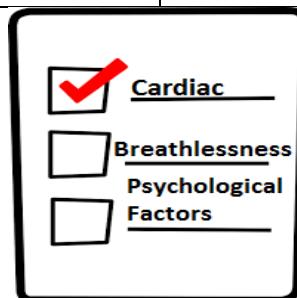
Inhaler Technique



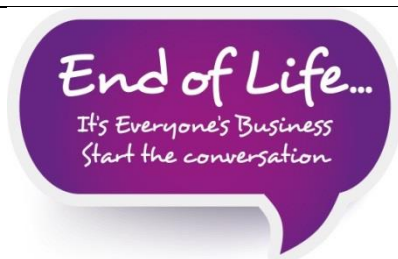
Measure O₂ Saturation



Self-management Plan



Address Co-morbidities



Advanced Care Planning

The below non-pharmacological management steps can provide important health benefits e.g. smoking cessation reduces disease progression, pulmonary rehabilitation improves quality of life, increasing activity levels improves prognosis.

Smoking Cessation:

- Utilise every contact to offer brief interventions for smoking cessation (Training available at: <http://www.ncsct.co.uk/>)
- Refer onto to smoking cessation services locally for all patients in agreement

Vaccinations

- Annual flu vaccination
- A single dose of pneumococcal vaccine PPV23 should be administered

Pulmonary rehabilitation:

- Patients should be referred if they have exercise limitation due to breathlessness (NICE Quality Standard, 2016). This is usually MRC 3 or greater (or mMRC \geq 2).
- Main contraindications include uncontrolled cardiovascular disease, significant balance/gait disorders and significant cognitive impairment.
- Resource: [Video clip showing patients participating in and talking about their experience of pulmonary rehabilitation.](#)
- All patients should aim to increase activity levels, with or without pulmonary rehabilitation.

Increase daily activity

- Patients should be advised of simple ways to improve functional activity to improve breathlessness and reduce the cycle of deconditioning.
- BLF Exercise Plan: <https://www.blf.org.uk/support-for-you/exercise>

Inhaler technique:

- This should be reviewed regularly and always before increasing treatment.
- It is not always possible to utilise same device for all treatments but you should aim to use the same type e.g. MDI/Aerosol or Dry powder devices

Good Practice Points:

- Add a spacer device for use with MDI.
- Instruction for inhaling via a MDI should be “gentle and deep”.
- Instruction for inhaling via a DPI should be “forceful and deep”.
- Resource: educational podcasts which show correct technique for each device are available at <http://wessexahsn.org.uk/videos/show?tag=Inhaler%20Technique>

Common errors:

- MDI: Not shaking the device before use, poor co-ordination and inhaling too quickly.
- Dry powder inhalers (DPI): Inhaling too slowly and priming/positioning errors.

Oxygen referral:

- Patients with a persistent, resting, stable SpO₂ of $\leq 92\%$ should be referred for home oxygen assessment. COPD treatment should be optimised prior to referral.
- Consider referral for patients with SpO₂ of $\leq 94\%$ where there is evidence of polycythaemia (haematocrit $\geq 55\%$ in males or $\geq 47\%$ in females), peripheral oedema or pulmonary hypertension.

Self-Management Plan & Rescue Pack:

- A self-management plan should be given to all patients.
- Rescue packs are suitable for some patients e.g. patients who are able to identify own symptoms of an exacerbation and act promptly, patients who are unlikely to overuse with repeated courses of steroids, patients who have had proper education on self-management etc.
- Patients should be reviewed within a reasonable timescale in relation to using their rescue pack. Find out whether they took it appropriately and whether it made any difference.
- Rescue packs are not normally suitable for prescribing as repeat medication.

Consider and treat co-morbid disease

- Consider screening for anxiety and depression (for example using PHQ-9 & GAD-7). Cognitive behavioural therapy can be useful.
- Consider screening for osteoporosis and for heart failure.

Advance care planning and end of life care

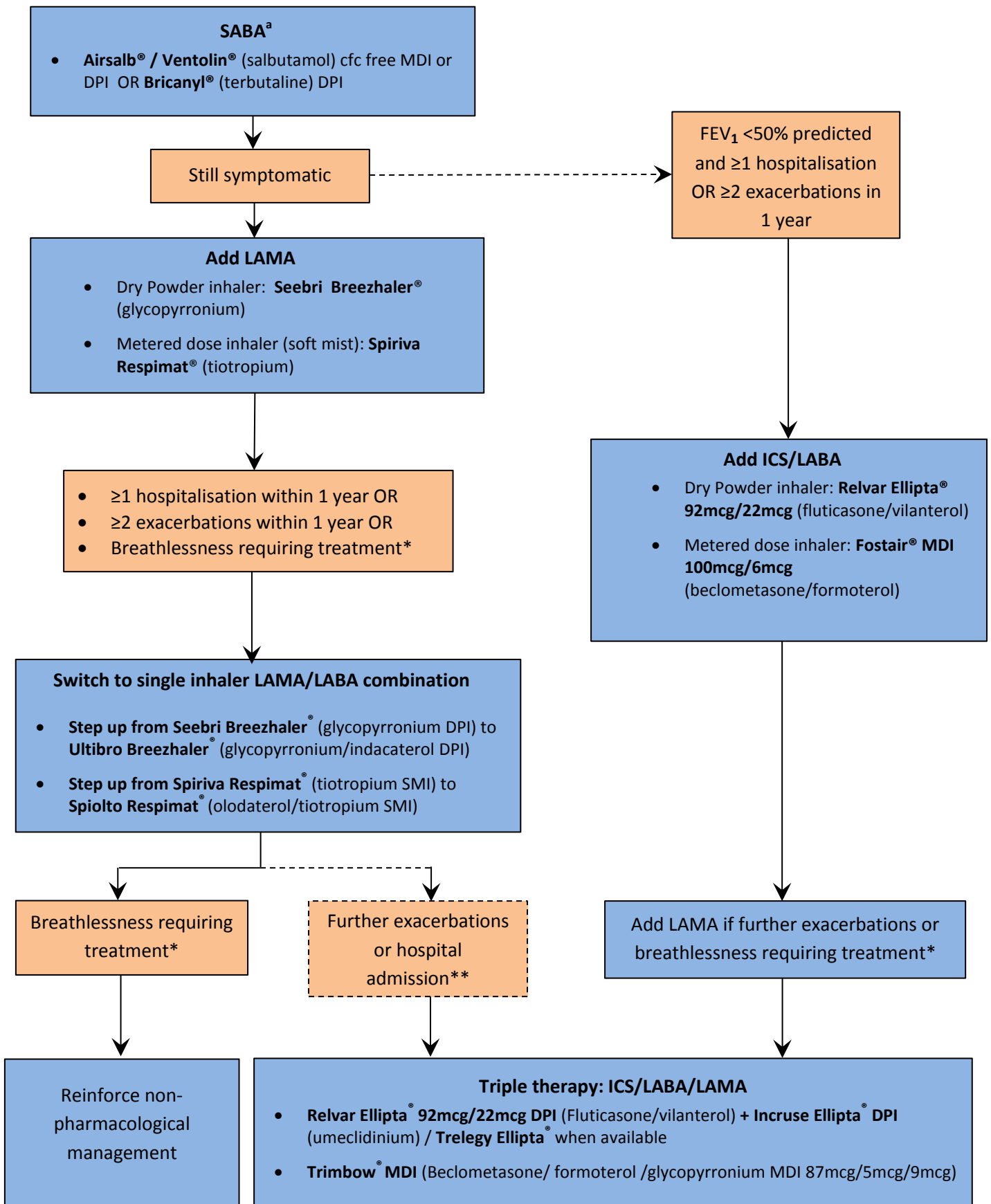
- Consider conversations about advance care planning and end of life care with referral to specialist teams as appropriate. Ensure these patients are on the [Gold Standards Framework register](#) as appropriate. Refer to local palliative care guidance.

Exacerbation

- a COPD worsening requiring oral corticosteroids and / or antibiotics

Pharmacological treatment pathway for patients with COPD

Note: Inhalers should be prescribed by **Brand Name**



* MRC Dyspnoea scale ≥ 3 or mMRC ≥ 2 or CAT ≥ 10 can be used to measure dyspnoea level for step-up treatment

** Escalate to triple therapy ONLY when these criteria are met

Overview

- Efficacy and safety were the primary considerations in the selection of the first choice recommendations stated in the pathway.
- We have offered one DPI and one MDI choice at each step; it is important to select a device that patients can use properly.
- Further options are listed below. The first choice and alternative options are cost-effective treatments.
- The first choice initial LAMA is guided by a preference to use glycopyrronium/indacaterol if step up is required. This recommendation has been made based on the large body of clinical evidence supporting the effects of glycopyrronium/indacaterol on relevant clinical outcomes including symptoms and exacerbations.
- Alternative choices based on a preference for a different inhaler device, or twice a day dosing are listed below.
- For patients who are intolerant to a LAMA, try a LABA; indacaterol (Onbrez Breezhaler®) is preferred.

Footnotes

^a Patients intolerant of a SABA may be initiated on a short or long-acting antimuscarinic [SAMA or LAMA].

Other treatment options

- **LAMA:** Incruse Ellipta (umeclidinium); Step up to Anoro (umeclidinium / vilanterol)
Triple therapy: Incruse (umeclidinium) + Relvar Ellipta 92mcg/22mcg (Fluticasone/vilanterol DPI) / Trelegy Ellipta® when available.
- **LAMA:** Eklira Genuair (twice daily) DPI (aclidinium); Step up to Duaklir Genuair (formoterol/aclidinium) DPI
Triple therapy: Eklira Genuair (aclidinium) + Fostair NEXThaler 100/6 (beclometasone/formoterol) DPI

Alcohol

- Airsalb, Fostair and Trimbrow metered dose inhalers contain ethanol which may be an important issue to some patients.

Roflumilast

- This is an option to add onto triple therapy as per the criteria stated in NICE TA 461 and should only be started by a specialist in respiratory medicine.

Treatment of new COPD patients

FEV₁

- Spirometry (measuring FEV₁ and FVC) is needed to make the diagnosis of COPD. FEV₁ can be used to measure worsening or improvement in patients.
- However, the majority of treatment decisions regarding bronchodilators and ICS should be based on symptoms and exacerbations, not FEV₁.

Stepwise approach to treatment

- Most patients can be treated with a stepwise escalation of pharmacotherapy, adding in one extra drug at a time (not two).
- This has the advantage of being able to assess the response to each drug, and preventing overtreatment.
- In general, a threshold of 2 or more exacerbations or one hospitalisation in the last year can be used to step up treatment

Initial COPD treatment

- Newly diagnosed COPD patients should be treated with a SABA initially. The next step (if needed) should be the addition of a LAMA; these drugs improve symptoms and reduce exacerbations.
- The only exception is patients with FEV₁<50% and ≥ 2 exacerbations who may start on ICS / LABA immediately.

Dual Bronchodilator Combinations

- Patients who are breathless or suffering with exacerbations, despite treatment with a LAMA can be stepped up to receive a combination inhaler containing a LABA + LAMA. These combination inhalers reduce symptoms and exacerbations.

Patients already established on inhaled medicines; Treatment optimisation

- Many patients are currently receiving inhaled medicines that differ to those recommended in the COPD pharmacological treatment pathway. Treatment of these patients should be changed to receive the equivalent inhalers in the pathway.
- Examples of potential optimising inhaler changes are provided below. Advantages for this are:
 1. Optimising inhaler device
 2. Patient's convenience
 3. Cost
- **Optimisation should be managed closely by a healthcare professional, and the technique of the new inhaler device(s) should be taught.**
- Patients who deteriorate after changing inhalers should be placed on alternatives stated in the pathway.

Optimising inhaled treatment examples

Previous treatment	Recommended new treatment
Seretide 250/25 MDI	Fostair 100/6 MDI
Seretide 500/50 DPI	Relvar 92/22 DPI or Fostair NEXThaler 100/6
Tiotropium Handihaler monotherapy	Seebri Breezhaler DPI (glycopyrronium) or Spiriva (tiotropium) Respimat*
Seretide 250/25 MDI plus tiotropium handihaler	Trimbow® (beclometasone/ formoterol /glycopyrronium MDI 87mcg/5mcg/9mcg)
Seretide 500/50 DPI plus tiotropium handihaler	Relvar 92/22 DPI plus Incruse DPI** / Trelegy® Ellipta (when available)
Symbicort 200/6 or 400/12 Turbohaler plus tiotropium Handihaler	Relvar 92/22 DPI plus Incruse DPI** / Trelegy® Ellipta (when available)

* The choice of drug should be influenced by which inhaler device the patient has received training in the use of and can demonstrate satisfactory technique (NICE).

** Relvar and Incruse are delivered by the same device (Ellipta), making it simpler for the patient to use the same technique.

Triple therapy step down

Definition: An exacerbation = a COPD worsening requiring oral corticosteroids and / or antibiotics.

- Patients treated with ICS+LABA+LAMA should be carefully reviewed for their exacerbation history. Those without an exacerbation in the previous 2 years should be considered for step down.

- ICS can be stopped and a LABA+LAMA combination started in the below circumstances, where the blood eosinophil count <150 cells / μl * is used to identify patients who are unlikely to be corticosteroid responsive:
 - 1) The patient has never suffered with an exacerbation
 - 2) The patient has no exacerbations (in the last 2 years) and the blood eosinophil count is <150 cells / μl
- ICS step down can either be immediate, or the dose can be halved for 4 - 8 weeks then stopped. (Those on highest ICS doses e.g. Seretide Accuhaler 500 or MDI 250 are most likely to require a stepped reduction via Accuhaler 250 or MDI 125).
- Patients who deteriorate should be reviewed quickly with a view to restarting ICS.
- A step down approach may require temporary use of a preparation without a marketing authorisation for use in COPD.

*eosinophil counts may be reported as number of cells $\times 10^9$ / L; The threshold will be 0.15×10^9 / L. Some laboratories only use one decimal place; in this circumstance, use 0.1×10^9 / L to withdraw ICS

Criteria for referral to Specialist Respiratory Team including Community Services

For patients with frequent exacerbations despite optimal primary care management, seek advice from a specialist respiratory team, which may be located within a community service.

Reason	Purpose
Diagnostic uncertainty	Confirm diagnosis and optimise therapy
Patients requiring 3 or more courses of steroids or antibiotics in a 12 month period*	For patients with frequent exacerbations seek advice from a specialist respiratory team
Frequent chest infections*	Exclude bronchiectasis
Co morbidity or secondary illness causing deterioration	Arrange Echo / BNP / CXR and ask for specialist advice
Onset of cor pulmonale (Hypoxia / Cyanosis / signs of heart failure or low SPO₂)	Confirm diagnosis and optimise therapy - Referral for LTOT Assessment
Assessment for oral corticosteroid therapy	Justify need for long term treatment or supervise withdrawal
A rapid decline in FEV₁	Encourage early intervention
Assessment for lung volume reduction treatments	Identify candidates for surgery and newer endobronchial treatments
Assessment for lung transplantation	Identify candidates for surgery
Dysfunctional breathing	Confirm diagnosis, optimise pharmacotherapy and access other therapists
Aged under 40 years or a family history of alpha1-antitrypsin deficiency	Identify alpha1-antitrypsin deficiency, consider therapy and screen therapy
Symptoms disproportionate to lung function deficit	Look for other explanations
Haemoptysis	Exclude carcinoma of the bronchus

*For patients with recurrent exacerbations requiring antibiotics and / or corticosteroids, careful investigation of infection is needed. Patient education is also important. Seek specialist advice if needed. In general, consider local community options before secondary care.

Terminology and abbreviations

CAT - COPD Assessment Test

DPI - dry powder inhaler

ICS - inhaled corticosteroids

LABA - long acting beta agonist

LAMA - long acting muscarinic antagonist

mcg - micrograms

MDI - metered dose inhaler

MRC Dyspnoea scale - Medical Research Council Dyspnoea Scale. NICE CG101 uses MRC; mMRC (Modified MRC) or CAT may also be used.

SABA - short acting beta agonist

SMI - soft-mist inhaler