Quality and Safety in Practice Committee

Chronic Obstructive Pulmonary Disease Quick Reference Guide

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The guide does not however override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of individual patients in consultation with the patient and/or guardian or carer.

The Quick Reference Guides are not policy documents. Feedback from local faculty and individual members on ease of implementation of these guides is welcomed.

Evidence-Based Medicine

Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.

In this document you will see that evidence and recommendations are graded according to the system used in the GOLD guidelines as outlined in Table 1.

Where possible, systematic review evidence is presented.

Audit suggestions for GPs are included throughout this document, printed in green. Patient safety suggestions are printed in red.

Table 1: Level of evidence based on GOLD guidelines

Evidence Category	Source of Evidence	Definition
A	Randomized Controlled Trials Rich body of high quality evidence without any significant limitation bias	Evidence is from endpoints of well-designed RCTs that provide consistent findings in the population for which the recommendation is made without any important limitations. Requires high quality evidence from >/= 2 clinical trials involving substantial numbers of patients without any bias.
B	Randomized Controlled Trials with important limitations Limited Body of Evidence	Evidence is from RCTs that include only a limited number of patients, post hoc or subgroup analyses of RCTS or meta analyses of RCTs. Also pertains when few RCTS exist, or important limitations are evident (methodologic flaws, small numbers, short duration, undertaken in a population that differs from the target population of the recommendations or the results are somewhat inconsistent).
C	Non- Randomized Trials Observational Studies	Evidence is from outcomes of uncontrolled or non-randomized trials or from observational studies.
D	Panel Consensus Judgement	Provision of guidance is deemed valuable but clinical literature addressing the subject is insufficient. Panel consensus is based on clinical experience or knowledge that does not meet the above stated criteria.

ICGP Quality and Safety in Practice Committee 2019

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List of Abbreviations

ACOS	Asthma-COPD overlap syndrome
BA	Breath-actuated
BD	Twice daily
CAT	COPD assessment test
COPD	Chronic obstructive pulmonary disease
DPI	Dry powder inhaler
FEV_1	Forced expiratory volume in one second
FVC	Forced vital capacity
GMS	General Medical Services
GOLD	Global Initiative for Chronic Obstructive Lung Disease
GP	General Practitioner
HSE	Health Service Executive
ICS	Inhaled corticosteroids
LABA	Long-acting beta2-agonist
LAMA	Long-acting muscarinic antagonist
MMP	Medicines Management Programme
mMRC	Modified Medical Research Council
SABA	Short-acting beta2-agonist
SAMA	Short-acting muscarinic antagonist
SMI	Soft mist inhaler

Aim of this Document

The aim of this document is to support general practitioners (GPs) in the management of Chronic Obstructive Pulmonary Disease (COPD) in their daily practice. The main section consists of a summary of the GOLD guidelines on COPD in combination with prescribing guidance from the HSE Medicines Management Programme and the COPD National Guideline Development Group. The algorithm designed for advising on inhaler prescribing has been developed to simplify the approach to the management of patients with COPD in general practice. All headings have hyperlinks to the original, more comprehensive documents. A number of appendices give practical guidance on investigations required for the revised GP contract (Appendix 1), on identifying and choosing inhaler devices (Appendix 2) and include a self-management plan (Appendix 3) which gives a concise summary of the main features for GPs.

Definition, Epidemiology and Contributing Factors[1, 2]

COPD is a common, preventable and treatable disease that is characterised by persistent breathlessness, chronic cough, sputum production and recurrent lower respiratory tract infections. It is due to airway and/or alveolar abnormalities usually caused by exposure to noxious particles or gases. COPD is a significant cause of mortality in Ireland, which has shown no major decline over the past number of years. Compared to other European countries, Ireland has one of the highest age standardised death rates from COPD. In Ireland it is estimated that 500,000 people are living with COPD yet only 200,000 are diagnosed. Ireland has the highest rate of hospital admission with COPD of any country in the OECD.

Tobacco smoking is the most important risk factor for the development of COPD. Tobacco smokers have a higher prevalence of respiratory symptoms, lung function abnormalities and mortality from COPD than non-smokers. Socio-economic status and social deprivation are also risk factors for both the development and progression of COPD. Other factors that may contribute to the development of COPD include genetic predisposition especially in individuals with α1-antitrypsin deficiency, occupational dust and fume exposure, exposure to outdoor and indoor air pollution including tobacco smoke and bronchial hyper-responsiveness.

Section 1: Diagnosis and Assessment

Section 1.1: Diagnosis [1]

COPD should be considered in any patient over the age of 35 who has breathlessness, chronic cough or sputum production and/or history of exposure to risk factors for the disease.

Table 2: Key indicators for considering a diagnosis of COPD (Adapted from GOLD Guidelines 2019)

Characteristics	Description
Dyspnoea that is:	- Progressive over time - Characteristically worse with exercise - Persistent
Chronic Cough	- May be intermittent and may be unproductive - Recurrent wheeze
Chronic Sputum Production	- Any pattern may indicate COPD
Lower Respiratory Tract Infections	- Recurrent
History of Risk Factors	- Host factors (genetic, congenital abnormalities etc) - Tobacco smoke - Occupational dusts, vapors, fumes, gases, chemicals

Consider COPD, and then arrange spirometry, if any of these key indicators are present in an individual over the age of 35. See Appendix 1 for additional investigations that are required as part of the revised GP contract. There is a role for additional investigations including a chest X-ray when excluding other diagnosis. The following differential diagnosis of COPD should also be considered during your assessment: Asthma, Bronchiectasis, Congestive Heart Failure, Lung Cancer, Tuberculosis.

Section 1.2: Spirometry[3]

Spirometry is essential to make an accurate diagnosis and should be performed on all patients for whom COPD is suspected based on their history and symptoms; the presence of a post-bronchodilator FEV1/FVC < 70% confirms the presence of persistent airflow limitation. Spirometry should be performed by a person who is trained to perform the test. With regard to the revised GP contract for COPD, patients can be enrolled on the chronic disease register based on clinical signs and symptoms. The diagnosis should then be confirmed with spirometry within 12 months of enrolment (where spirometry is available as a diagnostic test)[4].

Section 1.3: Assessment of Severity[1]

Classification of airflow limitation severity in COPD uses specific spirometry cut-off points in patients with FEV1/FVC < 70%. The GOLD spirometry grades (1-4) provide information with regard to airflow severity and prognostication but are not used to guide therapy.

Table 3: Classification of airflow limitation in COPD (Adapted from GOLD Guidelines 2019)

Grade	Description	FEV_1
GOLD 1	Mild	FEV1 ≥ 80% predicted
GOLD 2	Moderate	50% ≤ FEV1 ≤ 80% predicted
GOLD 3	Severe	30% ≤ FEV1 ≤ 50% predicted
GOLD 4	Very Severe	FEV1 ≤ 30% predicted

Section 1.4: Assessment of Symptoms and Exacerbations[1]

A comprehensive assessment of a patient's symptoms can be achieved through the mMRC and CAT questionnaires. The mMRC score will be recorded and submitted as part of GP contract dataset. We should also record the patient's exacerbations and number of hospital admissions with COPD in the past year; this allows us to identify whether the patient's primary symptoms are breathlessness, exacerbations or a combination of both, and allows for easier guidance on choice of therapy.

Section 2: Non-Pharmacological Management of COPD

Advice on smoking cessation should be offered at every opportunity and patients should be referred to smoking cessation clinics for psychological support, where available. The influenza vaccine and the pneumococcal vaccine decrease the incidence of lower respiratory tract infections and should be offered to all patients in line with our national immunisation guidelines. Encouraging exercise and referral to pulmonary rehabilitation services are an important part of non-pharmacological treatment of patients with COPD. Pulmonary rehabilitation improves symptoms, quality of life, and physical and emotional participation in everyday activities. If available, all patients with an mMRC score >2 should be referred.

MODIFIED MRC DYSPNEA SCALE[a]

PLEASE TICK IN THE BOX THAT APPLIES TO YOU | ONE BOX ONLY | Grades 0 - 4

mMRC Grade 0.	I only get breathless with strenuous exercise.	☐
mMRC Grade 1.	I get short of breath when hurrying on the level or walking up a slight hill.	☐
mMRC Grade 2.	I walk slower than people of the same age on the level because of breathlessness, or I have to stop for breath when walking on my own pace on the level.	☐
mMRC Grade 3.	I stop for breath after walking about 100 meters or after a few minutes on the level.	☐
mMRC Grade 4.	I am too breathless to leave the house or I am breathless when dressing or undressing.	☐

[a] Fletcher CM. BMJ 1960; 2: 1662.

Figure 1: Modified MRC Dyspnea Scale (with permission Gold Guidelines 2019)

A useful resource for patients is COPD Support Ireland. This is an advocacy and support organisation, driven by people living with COPD. They provide peer support groups, advice telephone lines and education and exercise classes for patients living with COPD. See www.copd.ie for more information. A patient information booklet 'COPD and Me'[5] can also be downloaded.

Table 4: Summary of recommendations for non-pharmacological management of COPD (adapted from draft version of national clinical guidelines for COPD 2019, National Clinical Programme for Respiratory)

Non-Pharmacological Management of COPD		
Recommendation		**Evidence-based Grade of Recommendations**
Smoking cessation	Smoking cessation measures are recommended for the prevention of COPD, to include advice on smoking cessation, nicotine replacement therapy and pharmacotherapy. (Grade A) (GOLD)	**Grade A**
Influenza vaccination	The provision of annual influenza vaccination is recommended. (Grade A) (GOLD)	**Grade A**
Pneumococcal vaccination	The provision of the pneumococcal vaccination is recommended. (Grade B) (GOLD)	**Grade B**
Pulmonary rehabilitation	The provision of pulmonary rehabilitation to stable patients with exercise limitation despite pharmacological treatment is recommended. (Grade A) (GOLD) The provision of pulmonary rehabilitation to patients who have recently been hospitalised for an acute exacerbation of COPD is recommended. (Grade B) (GOLD)	**Grade A** **Grade B**
Nutritional support	Nutritional support should be considered in all malnourished patients with COPD. (Grade B) (GOLD)	**Grade B**
Monitoring of spirometry	In stable diagnosed COPD patients, decline in FEV1 need not be tracked by spirometry more frequently than every two years. (Expert Opinion) (National Guideline Development Group)	**Expert Opinion[6]**
Role of palliative care	For advanced COPD care and palliation, patients should be referred to a palliative care specialist as appropriate. (Expert Opinion) (National Guideline Development Group)	**Expert Opinion[6]**

Section 3: Pharmacological Therapy for COPD[1]

Pharmacological therapy is used to reduce symptoms, reduce the severity and frequency of exacerbations, and improve exercise tolerance and health status.

Table 5: Summary of pharmacological management of COPD (adapted from draft version of national clinical guidelines for COPD 2019, National Clinical Programme for Respiratory)

Pharmacological Management of COPD		
Recommendation		**Evidence-based Grade of Recommendations**
Short acting bronchodilators	Inhaled short acting beta2-agonists (SABAs) should be prescribed to patients with confirmed COPD where rescue therapy is needed. (Grade A) (GOLD)	**Grade A**
Long acting bronchodilators	Long-acting bronchodilators should be offered to patients with confirmed stable COPD who have respiratory symptoms (e.g. dyspnoea or cough). (Grade A) (GOLD) Inhaled long acting muscarinic antagonists (LAMAs) should be offered to patients as first line maintenance therapy in patients with confirmed stable COPD who have continued respiratory symptoms (e.g. dyspnoea, cough) or who have a history of exacerbations with COPD. (Grade A) (GOLD) In patients with confirmed stable COPD who are on monotherapy with inhaled LAMAs or inhaled long-acting beta-agonists (LABAs) and who continue to have persistent dyspnoea, combination therapy with both LAMA and LABA is recommended. (Grade A) (GOLD)	**Grade A** **Grade A** **Grade A**
Inhaled corticosteroids	Offering an inhaled corticosteroid (ICS) in symptomatic patients with confirmed stable COPD as first line therapy is not recommended. (Grade A) (GOLD) In patients with confirmed COPD who are on combination therapy with a LAMA and a LABA and have frequent COPD exacerbations, it is suggested that the addition of an ICS may be reasonable as a trial in conjunction with eosinophil level guidance. (Grade B) (GOLD)	**Grade A** **Grade B**

Pharmacological Management of COPD		
Recommendation		**Evidence-based Grade of Recommendations**
Prophylactic use of Macrolide Antibiotics (to be prescribed in secondary care)	In patients who have severe COPD with two or more treated exacerbations in the last 12 months and are currently not smoking, the addition of azithromycin may be considered for one year (Grade A). (GOLD) This needs to be done in conjunction with Respiratory Specialist advice with surveillance for bacterial resistance and side effects such as impaired hearing and cardiac arrhythmias.	**Grade A**
Theophyllines	In certain selected patients, the addition of a theophylline may be reasonable. (Grade B) (GOLD)	**Grade B**
Roflumilast (to be prescribed in secondary care, it is not approved for reimbursement by the HSE)	In selected patients with the chronic bronchitic phenotype of COPD with severe to very severe air flow obstruction and history of exacerbations, a phosphodiesterase-4 (PDE-4) inhibitor may be a reasonable add on to therapy with a LAMA and LABA and possibly ICS. This medication is not approved for reimbursement by the HSE. (Grade B) (GOLD)	**Grade B**
Antioxidants and mucolytics	The use of mucolytic and antioxidants in routine practice for management of patients with COPD is not recommended. (GOLD)	
Leukotriene receptor antagonists	The use of leukotriene receptor antagonists in the management of patients with COPD is not recommended. (GOLD)	

Table 6: Inhaler technique (with permission Gold Guidelines 2019)

Inhaler technique	It is recommended that each patient commenced on an inhaler device would be provided with instructions and a demonstration of proper inhalation technique prior to using the device and that such technique is checked on a regular basis subsequently. Inhaler technique and adherence to therapy should be assessed before concluding that current therapy is insufficient and a change in therapy considered. (Expert Opinion) (GOLD)	**Expert Opinion** [6]

Section 3.1: Inhaled Medicines for COPD

The simplified approach from the Irish College of General Practitioners and HSE Medicines Management Programme embraces both of the treatable traits addressed in the latest GOLD guidelines: breathless patients and patients who have frequent exacerbations. It was developed to support GPs prescribing in the management of patients with COPD. It incorporates a common-sense progression of treatment that follows the evidence. There is no progression of all traits to triple therapy, there is overarching emphasis on non-pharmacological interventions (smoking cessation, vaccination and pulmonary re-habilitation) and review of diagnosis, inhaler technique and adherence throughout.

The algorithm below combines the pertinent elements of the GOLD guidelines in clear and simple-to-follow treatment algorithms developed for the busy GP to use in consultation with their patients. Asthma COPD Overlap (ACOS) should be treated with an inhaled corticosteroid in line with Asthma Guidelines where this exists. Diagnosis is based on a history of Asthma Spirometry with reversibility testing showing reversible obstruction.

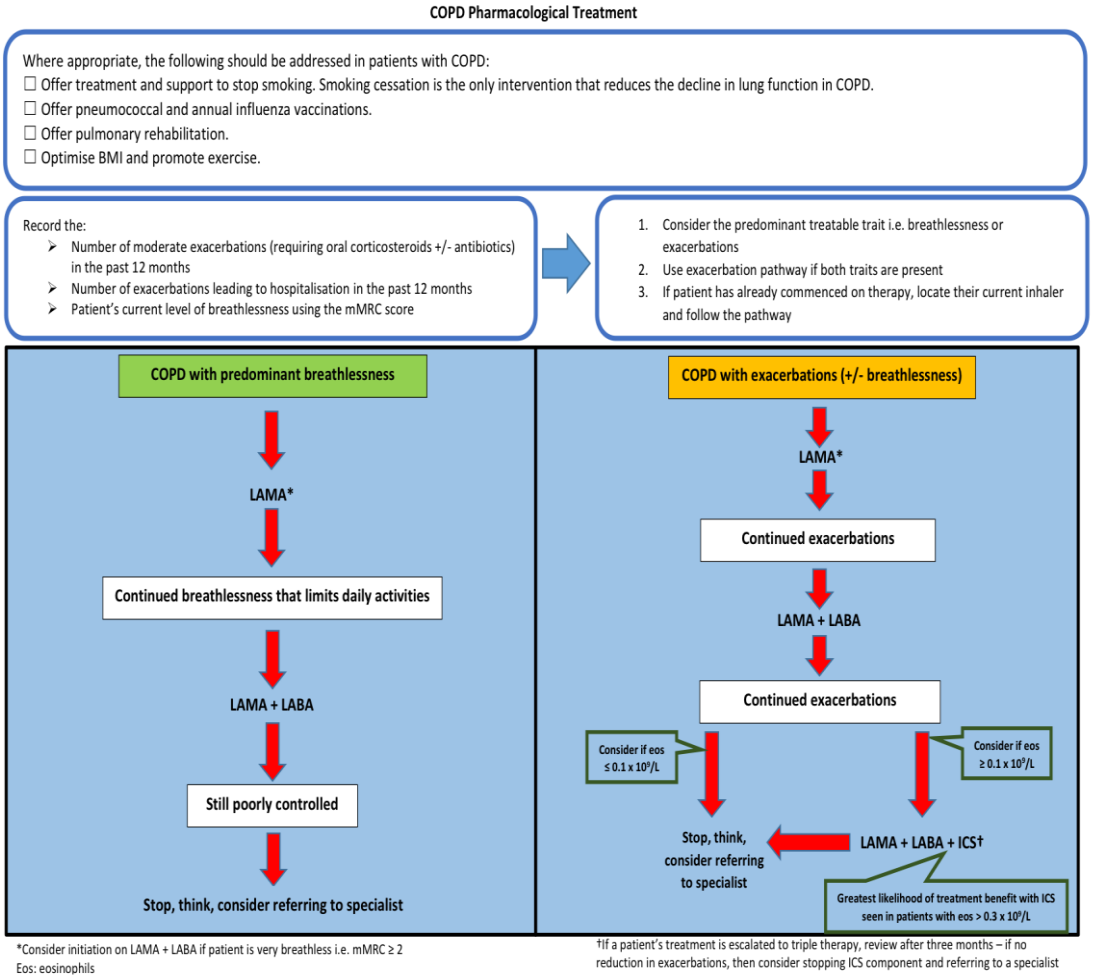


Figure 2: Algorithm for pharmacological treatment of COPD in primary care (ICGP & MMP)

Section 3.2: Using Eosinophil Counts to Guide Inhaled Corticosteroid Therapy[1]

The 2019 update to the GOLD guidelines has advised on the introduction of using blood eosinophil count as a biomarker for estimating the efficacy of inhaled corticosteroids (ICS) for the prevention of exacerbations. Blood eosinophil counts are readily available as part of a routine Full Blood Count in Irish hospital laboratories. It has been recognised that there is a continual relationship between the effects of an ICS and eosinophil counts.

Minor effects or indeed, no effects, have been observed at lower eosinophil counts, with incrementally increasing effects noted at higher counts. It has been concluded that ICS containing inhalers have little or no effect in COPD at a blood eosinophil count ≤ 0.1x109/L, therefore it allows us to now identify patients with a low likelihood of treatment benefit with ICS. Conversely, the threshold of ≥ 0.3x109/L can be used to identify patients with the greatest likelihood of benefit from ICS. A patient who has a blood eosinophil count ≥0.1x109/l and who has a number of moderate exacerbations in a year may also be considered for ICS therapy. The mechanism for an increased ICS effect in COPD patients with a higher blood eosinophil count remains unclear. Overall, looking at blood eosinophil counts of our patients in general practice, can help us, in conjunction with clinical assessment of exacerbations, to estimate the likelihood of a beneficial preventative response when adding an ICS to bronchodilator treatment. There is high quality evidence that ICS use is associated with higher prevalence of oral candidiasis, hoarse voice, skin bruising and pneumonia.

Table 7: Eosinophil counts and likely benefits with ICS therapy

Eosinophil Count	Likelihood of Benefit from ICS
≤0.1x109/l	Low
≥0.3x109/l	Greatest

Section 3.3: Choosing Inhaler Devices[7]

- Consider a patient's inspiratory flow rate, disease severity, preference for a device, dexterity and likelihood of compliance based on the number of actuations required daily. Further information on all inhalers available can be explored on the medicines management programs document on COPD.
- The medicines management programme for the HSE recommend using the ELLIPTA pathway where the patient has no preference. This is a DPI (Dry Powder Inhaler) and the device requires a once daily actuation. Other DPI inhalers for patients to consider include the GENUAIR pathway which is a twice daily actuation and the BREEZEHALER pathway, a once daily actuation (Appendix 2).
- For patients who you suspect may have a low inspiratory flow rate and may not be getting optimal benefit using a DPI (Dry Powder Inhaler) consider using a fine mist inhaler such as a RESPIMAT inhaler as recommended by the medicines management programme. These require two actuations daily (Appendix 2).
- For some patients who are unable to use an inhaler device, nebulised therapy may be suitable. However, for patients who are able to use an inhaler device correctly, there is no additional benefit from using a nebuliser.
- Useful educational patient inhaler videos are available to refer your patient to.

Section 4: Review, Assess and Adjust[1]

After starting any inhaled therapy, it is important to review the patient's symptoms and exacerbations. Always remember to check compliance, inhaler technique and review the diagnosis before switching inhaler device or escalating/de-escalating treatment. Any change in treatment requires a subsequent review of the clinical response.

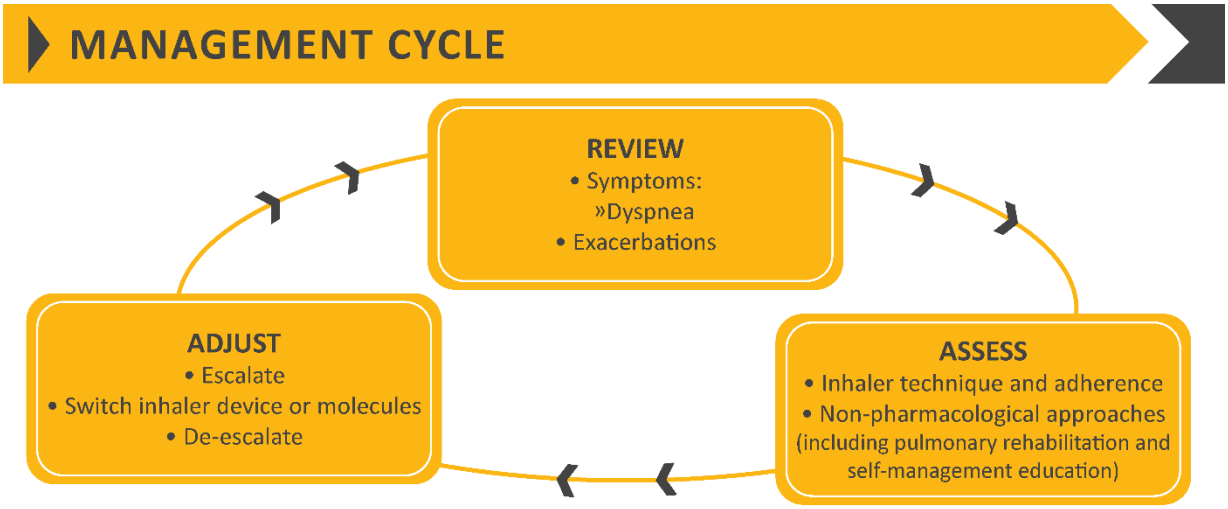


Figure 3: Treatment management cycle (with permission from GOLD Guidelines 2019)

Section 4.1: Deprescribing Inhaled Corticosteroids[7]

When reviewing COPD inhaler therapy, there may be patients in whom ICS are no longer indicated. Patients may currently be using an ICS in combination with a LABA, or in combination with a LABA and a LAMA. The long-term use of ICS is associated with increased risk of adverse events, including non-fatal pneumonia, mycobacterial infections, diabetes onset and progression and fractures. If the patient is on a high-dose ICS, it is not advisable to stop this suddenly because there is a risk of adrenal suppression. Suitable step-down regimens are outlined in figure 3 in order to facilitate the withdrawal of ICS.

Evidence from a randomised controlled trial has shown that in patients with severe but stable COPD who were receiving triple therapy, the stepwise withdrawal of ICS was non-inferior to the continuation of such therapy, with respect to the risk of moderate or severe exacerbations[9]. The withdrawal of ICS in patients on long-term triple therapy with no more than one exacerbation in the previous year was found to result in no significant difference in the rates of COPD exacerbations when compared to patients who remained on triple therapy. Withdrawal of ICS in patients on triple therapy with a blood eosinophil count of ≥0.3× 109/L or more led to an increase rate of exacerbations in this cohort[10]. De-prescribing of ICS in patients on triple therapy is therefore not recommended in these patients.

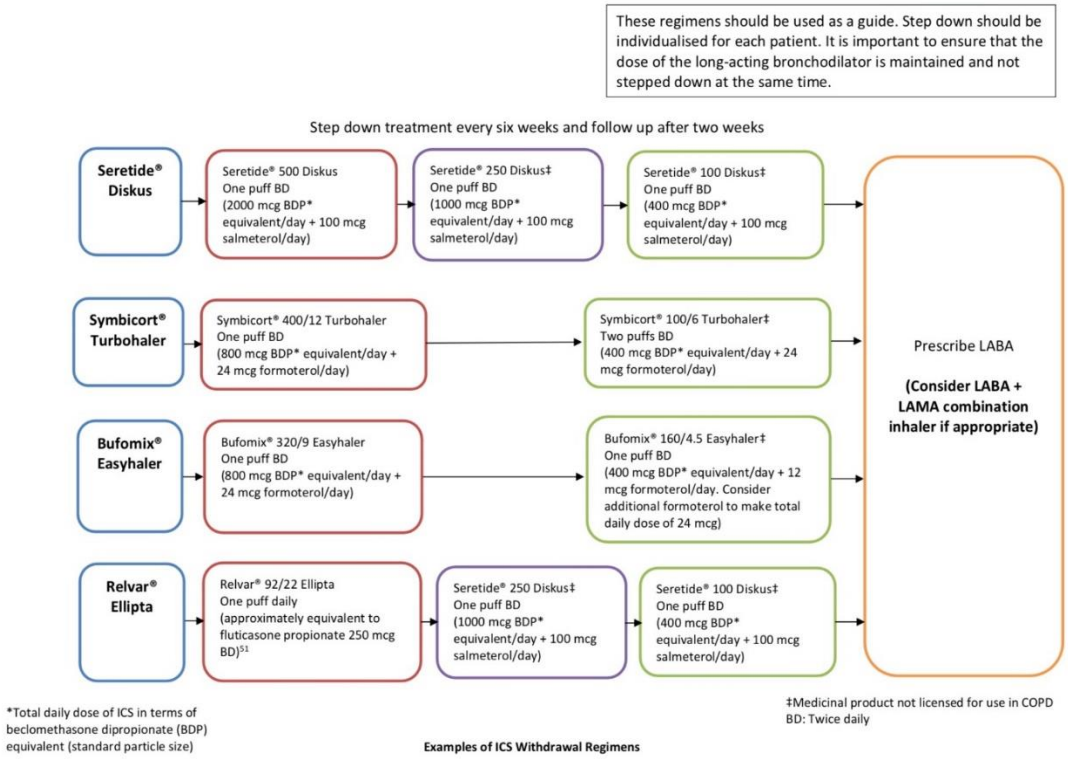


Figure 4: Reducing the use of ICS in mild to moderate COPD (with permission of the Medicines Management Programme 2018)

Section 4.2: Components of Step-Down Withdrawal of Inhaled Corticosteroids[8]

(Adapted from "Reducing the use of inhaled corticosteroids in mild-moderate COPD – Clinical Guidance", Clinical Effectiveness Group, Centre of Primary Care & Public Health, Queen Mary University of London.)

- Discuss the balance of risks and benefits of ICS with the patient. Provide written information and a management plan for a phased reduction of ICS using a series of inhalers reducing in steroid potency.
- Initially step down to the next lowest potency inhaler.
- Step down should occur no more frequently than every six weeks after a face-to-face review and assessment of symptoms.
- Follow up two weeks after step down, or sooner if symptoms necessitate, and periodically thereafter as clinically needed.
- Consider face-to-face or telephone reviews during the withdrawal phase.
- Maintain or increase dose of bronchodilators (LAMA/LABA) or commence additional bronchodilator if required.
- Ensure good inhaler technique.
- Encourage uptake of influenza and pneumococcal vaccinations, smoking cessation and pulmonary rehabilitation.
- Advise on the identification and early self-management of exacerbations; provide rescue medication (antibiotics and oral corticosteroids), if appropriate.

Section 5: Management of Acute Exacerbations[1]

The initiation of short acting bronchodilator therapy is recommended for patients with an exacerbation of COPD in the first instance. Secondly, a course of systemic steroids (prednisolone at 40 mg daily for five days) to be administered orally is recommended for all patients. Therapy should not be administered for more than five days.

Where a patient has an exacerbation of COPD associated with increased sputum volume or purulent sputum it is recommended that a first-line antibiotic such as amoxicillin, doxycycline or a macrolide should be used. Reserving broader spectrum antibiotics such as quinolones for specific indications is recommended. See www.antibioticprescribing.ie for further guidance on antibiotic prescribing[11].

Section 6: Self-Management Plans[1]

Ideally, patients with COPD would have a self-management plan detailing how to recognise and respond to early signs of an exacerbation. The aim of self-management interventions is to motivate, engage and coach the patients to positively adapt their health behavior and develop skills to better manage their disease on a day-to-day basis.

In addition to addressing behavioral risk factors (i.e. smoking, diet, exercise), self-management should involve patients in monitoring and managing the signs and symptoms of their disease, being compliant with treatment (including to medications and other medical advice), maintaining regular contact with healthcare providers, and managing the psychosocial consequences of their condition. Patients who are deemed appropriate by the GP, may be given a rescue prescription of oral steroids and antibiotics to hold at home in conjunction with a self-management plan. They should also be advised to contact the GP or Specialist Respiratory Nurse to inform the healthcare professional if they have commenced their rescue prescription (Appendix 3).

Section 7: Referrals to Secondary / Tertiary Care

Referral for advice, specialist investigations and treatment may be appropriate at any stage of the disease, not just for those who are severely disabled. Consider referral for patients with any of the following:

- Diagnostic uncertainty
- Onset of cor pulmonale (Right-sided heart failure)
- Dysfunctional breathing
- Rapid Decline in FEV1
- Haemoptysis
- Bullous lung disease
- Patient requesting a second opinion
- Assessment for long term oxygen therapy
- Onset of symptoms under 40 years of age or a family history of α1-antitrypsin deficiency
- Consideration of treatment with azithromycin

Section 7.1: Multimorbidity[1]

COPD often co-exists with other diseases that may have a significant impact on the disease course. In general, the presence of co-morbidities should not alter COPD treatment and co-morbidities should be treated according to our usual standards despite the presence of COPD.

- Cardiovascular diseases are common and important co-morbidities in COPD.
- Osteoporosis and depression/anxiety are frequent, important co-morbidities in COPD and are often under-diagnosed and associated with poor health status and prognosis.
- Gastroesophageal reflux is associated with an increased risk of exacerbations and poor health status.
- Lung cancer is frequently seen in patients with COPD.
- Asthma COPD Overlap should be treated with an inhaled corticosteroid in line with Asthma Guidelines where this exists. Diagnosis is based on a history of Asthma and/or Spirometry with reversibility testing showing reversible obstruction. *
- When COPD is part of a multimorbidity care plan, attention should be directed to ensure simplicity of treatment and to minimise polypharmacy.

*Reversibility testing with ß-agonist indicates an improvement of >12% and >200ml in FEV1 and/or FVC approximately 15 mins after inhalation.

Section 7.2: Palliative Care

Some people with COPD experience a rapid decline in lung function which may lead to an early death, while others have a gradual, progressive decline punctuated by severe exacerbations. This uncertainty of the disease trajectory in COPD can make it very difficult for a GP to broach the subject of death with a patient.
However, morbidity and mortality associated with the condition are high and adopting a palliative care approach can be invaluable.

Aspects of non-specialist palliative care to consider early in the disease include the following:

- Symptom management, including dyspnoea, pain, fatigue.
- Responding to anxiety and depression that is prevalent with the disease.
- Assisting in understanding the disease trajectory and advice and support relating to advanced planning.
- Consider the use of a handheld fan and low-dose oral morphine for the management of breathlessness in the end-stage COPD patient.

Triggers for referral to specialist palliative care services include the following:

- FEV1 < 30%,
- Increased hospitalisations (> 3 in the last year) with advanced age or multiple co-morbidities
- Poor functional status
- On long-term oxygen therapy
- mMRC grade 4
- Breathlessness at rest or on minimal exertion between exacerbations
- Signs and symptoms of right heart failure
- More than six weeks of systemic steroids for COPD in the preceding six months

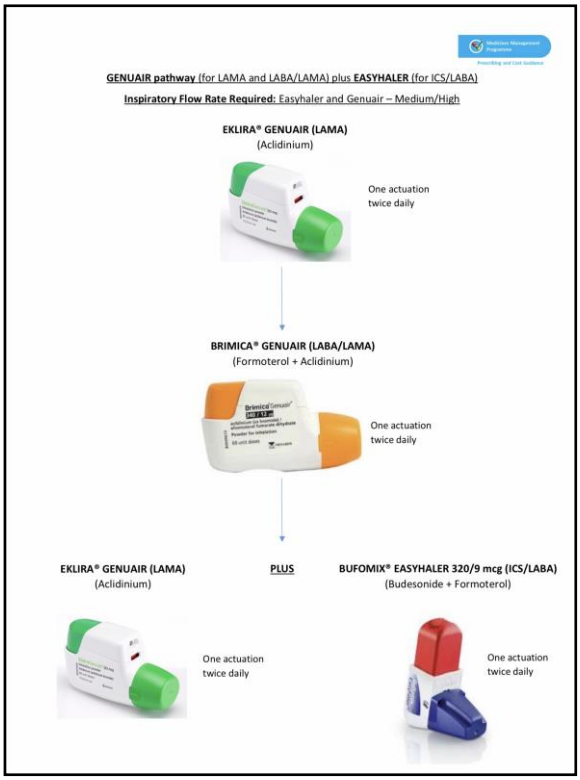
Appendix 1: Chronic Disease Management Programme for COPD

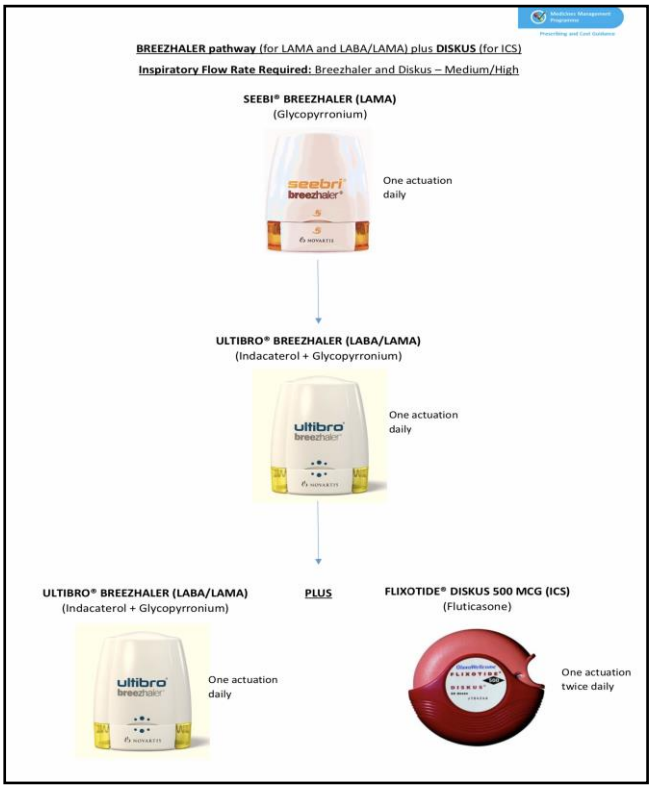
Table 8: Chronic Disease Management Programme for COPD

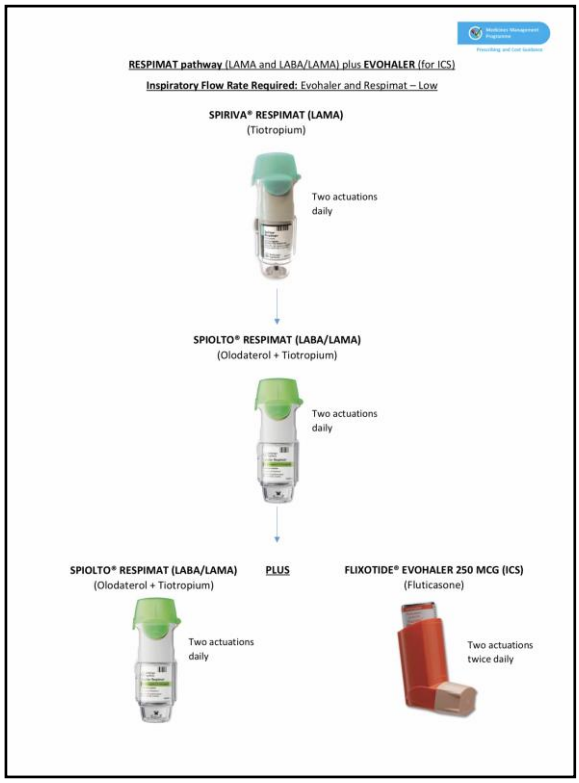
Chronic Disease Management Programme for COPD	
Investigations / Recordings (If clinically appropriate)	**Frequency**
Spirometry	Diagnosis, if available
ECG	If clinically appropriate
Lipids profile	Annual Review
Renal function tests – including serum creatinine, eGFR (estimated glomerular filtration rate) if clinically relevant	Annual review
mMRC Dysponea Scale	Annual review
Full blood count	Registration visit
Thyroid function tests	Registration visit
Liver function tests	Registration visit

Appendix 2: Medicines Management Programme (MMP)

The Medicines Management Programme (MMP) has developed a number of pathways to support prescribers in inhaled medicines for COPD. The MMP recommends the ELLIPTA pathway in the absence of a patient preference for a particular device.







Self-Care Plan

Chronic Obstructive Pulmonary Disease (COPD)

This is a guide to managing your symptoms. It's important to look after your own health and wellbeing, with support from your team of health professionals.

SYMPTOMS		ADVICE
FEELING WELL	• I am able to carry out my usual activities • My phlegm is a normal colour and amount for me	• Continue with my medication as prescribed and continue my day as normal • Keep as active as possible
BAD DAY	• My COPD may be bothering me. For example, I am more breathless than usual.	• Use chest clearance techniques • Use my reliever inhaler • Use breathing control exercises • If no relief I may be unwell. Move on to 'Feeling Unwell' section for guidance.
FEELING UNWELL	• I am more wheezy, breathless • I have more phlegm, which is yellow or green in colour	• Take my normal medications and inhalers • Take my reliever medication every 4 to 6 hours • **Start rescue antibiotics and steroids** • Call GP or GP Out-of-Hours GP service for advice • Call my COPD Outreach Team or COPD Support Ireland advice line
VERY UNWELL	• **My reliever and rescue prescription are not helpful or I feel worse**	• **I should urgently contact my GP or Out-of-Hours GP service. Go to the hospital Emergency Department if GP is not available.** • **If I am short of breath at rest, have chest pain or confusion this is an emergency. CALL 112 or 999 and ask for an ambulance.**

References

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