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NHS

Treatment Guidelines for the acute and chronic management of COPD

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: This guideline was approved by the Medicines Clinical Reference Group
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Background

- This document is designed to support clinicians in primary and secondary care with diagnosis, non-pharmacological management and pharmacological treatment choices for the management of chronic obstructive pulmonary disease (COPD) in adult patients in NCL.
- NCL ICS have made a commitment to improve COPD care whilst reducing carbon emissions in accordance with the NCL Green Plan and national Greener NHS plans.[1] This document highlights the environmental impact of inhalers on formulary in NCL and aims to guide clinicians to choosing sustainable options where clinically suitable. The recommendations in this guideline

Updates to previous guidance:

- Quality assured diagnostic spirometry should be performed > 6 weeks post any exacerbation and as per ARTP (Association of Respiratory Technology and Physiology) standards and the NCL Respiratory diagnostic Hub SOP. If baseline spirometry obstructed (or mixed restriction and obstruction) perform reversibility testing.
- Addition of FeNo testing if history suggests asthma
- If patient shows Asthma symptoms PLUS eosinophils > 0.4 AND/OR FeNO > 50 is supportive of an asthma diagnosis then code and treat patient accordingly – as per NICE asthma guidelines 2024 or recently published NCL adult asthma guidelines.
- SNOMED codes have also been provided to code appropriately
- We have updated the contact details of all the smoking cessation services and pulmonary rehabilitation services

Objectives

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- **To diagnose COPD early and accurately. Screen for co-morbidities e.g. cardiac disease and diabetes**
- **To optimise COPD care according to national and international guidelines.**
- **To promote non-pharmacological high value treatment approaches (treatment of tobacco dependence, pulmonary rehabilitation and vaccinations).**
- **To promote safe and effective use of inhaled medicines and inhaler devices:**

1. Focus on finding the right medication and device for each individual in consultation with them and their carers, through shared decision making.
2. Assess and optimise inhaler technique at every opportunity.
3. Follow patients up to ensure suitability of device and disease control.
4. Do not undertake empirical switching of inhaled medicines or inhaler devices across the population. [2]

- **To reduce the carbon footprint of inhaler prescribing**
- Offer Dry Powder Inhalers (DPIs) or Soft Mist Inhalers (SMIs) as first choice when clinically appropriate (e.g., if they have good inspiratory effort, or have better inhaler technique with a DPI than other devices).
- If pMDIs are needed for an individual, then choose brand and regime with care to minimise the carbon footprint.
- Ask patients to return all used or unwanted inhalers to community pharmacies or dispensaries for appropriate disposal.

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Diagnosing COPD in adults

Diagnosing COPD in adults

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Diagnosis of COPD should be considered if

- **Age** over 35 years
- **Exposure**: Tobacco > 10 pack years smoking history, cannabis or smoking other drugs, biofuels in patients from overseas countries such as Asian subcontinent.
- **Symptoms**: These tend to be persistent or progressive in COPD (rather than variable as in asthma)
    - exertional breathlessness (assess MRC breathlessness score)
    - chronic cough
    - regular sputum production
    - frequent winter 'bronchitis'
    - wheeze

  (Consider asthma component also see other causes).

Recommended Assessments

- **Physical examination**
- **Observations (O2 saturations, BMI, BP)**
- **Chest X-Ray** (in all patients)
- **Bloods** (FBC & BNP in all patients) Consider (U&E's, TFT, Hba1C, A1AT)
- **Consider an asthma component/steroid responsiveness. Consider FeNO and blood eosinophil counts (BEC)**
- Consider HRCT chest or respiratory referral if suspected bronchiectasis
- May be eligible for Lung Cancer Screening
- Assess Qrisk 3 and review likelihood of ischaemic heart disease

- **Consider alpha-1-antitrypsin deficiency** (which can be present in non-smokers).

MRC breathlessness score

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MRC Breathlessness Score	Code
5 Too breathless to leave house, or breathless when dressing or undressing	SNOMED CT 1485150018
4 Stops for breath after walking about 100m or after a few minutes on level ground	SNOMED CT 1485149018
3 Walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace	SNOMED CT 1485148014
2 Short of breath when hurrying or walking up a slight hill	SNOMED CT 1485148014
1 Not troubled by breathlessness except on strenuous exertion	SNOMED CT 1485144011

CONSIDER REFERRAL TO PULMONARY REHABILITATION IF MRC 3 or ABOVE OR RECENT HOSPITAL ADMISSION OR IF FREQUENTLY EXACERBATING

Oxygen Saturations

Pulse oximetry: Measure oxygen saturations (SaO2) using a reliable oximeter (e.g., *ChoiceMMed MD300-D Finger Pulse Oximeter MD300C26* or similar) in any patient with acute or worsening breathlessness to identify:

- new or worsening respiratory failure, and the need or not for admission;
- and to assess the need for referral for Long Term Oxygen Therapy (criteria for referral: SaO2 < 92% on air in stable patient with severe disease or new ankle swelling) who is ex- or non-smoker (NB: LTOT is not prescribed for smokers due to risks).
- During acute exacerbations or awaiting transfer to hospital in an emergency target O2 saturations are either 90-94% or 88-92% depending on baseline saturations in stable state and history of previous hypercapnia (clinical judgement needed). Ideally a universal care plan reflects target saturations for patients at risk of worsening hypercapnia

Spirometry Diagnostic Abbreviations

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- F/V- flow volume
- V/T- volume time
- VC- vital capacity
- FVC- forced vital capacity
- FEV1- forced expiratory volume in the first second
- FEV1/FVC- flow measurement expressed in litres per second, and given as a ratio or percentage
- LLN- lower limit of normal (dependent on patient characteristics e.g. height, ethnicity and gender)
- BD- bronchial dilation
- FeNO- fractional exhaled nitric oxide
- Z-score helps determine if a measured value is within the normal range or if it's significantly above or below expected
- BMI- body mass index

Diagnosing COPD

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Quality assured diagnostic spirometry is required. This should be > 6 weeks post any exacerbation and as per Association of Respiratory Technology and Physiology (ARTP) standards and the NCL Respiratory Diagnostic Hub SOP (NCL RDH SOP v0.22.pdf). If baseline spirometry obstructed (or mixed restriction and obstruction) perform reversibility testing**.**

Reversibility testing: use **MDI** salbutamol 4 puffs x 100 micrograms via a spacer device (Use either disposable spacer or sterilise between use). The salbutamol MDI can be supplied by e.g. PGD and can be reused if infection control process is followed. Repeat spirometry >15 mins post bronchodilator (and within an hour of administration).

Spirometry should be carried out by a healthcare professional competent in its performance working towards ARTP registration (with supervision) or ARTP registered.

Airflow obstruction on spirometry is defined by ARTP as: FEV1/FVC ratio <LLN.
Note NICE guidance [NG115] still references airflow obstruction as FEV1/ FVC < 0.7. Therefore, if FEV1/FVC is <0.7 but > LLN consider case discussion with respiratory team to decide appropriate clinical diagnosis - clinical judgement needed.

If evidence of restriction VC/ FVC < LLN on spirometry, consider the causes – further tests may be needed.

Screening spirometry with handheld device may be valuable for case finding in some clinical contexts.
Spirometry diagnostic abbreviations

Crib sheet for interpretation of spirometry – quick guide

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1. Review reproducibility and F/V or V/T curve

2. Which is greater? VC of FVC? The largest should be used in the ratio FEV1/(F)VC

3. FEV1/(F)VC < LLN = obstructive pattern → Asthma? Or COPD?- note history, response to BD and FeNO if appropriate

4. VC or FVC < LLN – restrictive pattern (use whichever is greatest of VC or FVC pre or post bronchodilator) → Why restrictive? BMI? Crackles? Needs referral. Note can occur together with obstruction

5. If FEV1/ (F)VC obstructive administer bronchodilator

6. Significant bronchodilator response is suggested by >200ml increase AND 12% change in FEV1 or FVC
   - OR an increase in z score of 0.7 for FEV1 or 0.64 for FVC
   - OR >8% change in FEV1 % predicted

ARTP spirometry standards

Spirometry diagnostic abbreviations

Note NICE guidance [NG115] still references airflow obstruction as FEV1/ FVC < 0.7. Therefore, if FEV1/FVC is <0.7 but > LLN consider case discussion with respiratory team to decide appropriate clinical diagnosis- clinical judgement needed

7. Post Bronchodilator FEV1/ (F)VC < LLN = still obstructed → This means element of fixed airflow obstruction- seen in asthma with fixed airflow obstruction or COPD (most common)

Linking spirometry result to diagnosis

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- **Consider diagnosis of COPD if irreversible airflow obstruction:** (FEV1/FVC <LLN post bronchodilator). Note if minimal/ no smoking history this could also represent **asthma with fixed airflow obstruction**
- **Consider diagnosis of COPD AND Asthma** if FEV1/FVC < LLN post bronchodilator BUT significant bronchodilator response PLUS asthma features (Box 1)
- **Consider diagnosis of Emphysema** if normal spirometry but changes on CT imaging (e.g. on lung cancer screening scan).

Box 1. Asthma symptoms PLUS eosinophils > 0.4 AND/OR FeNO > 50 is supportive of an asthma diagnosis – see NICE 2024

Document EMIS SNOMED codes appropriately

- Asthma (195967001)
- COPD - Chronic obstructive pulmonary disease (13645005)
- Asthma with irreversible airflow (401000119107)
- For all diagnoses also code as "Established diagnosis" (14657009) to indicate that quality assured diagnostic testing has been performed
- If spirometry normal consider other causes of symptoms

Start appropriate treatment (see pages 17-21)

Reassess clinical status in view of response to treatment

Considering onward referral or advice and guidance

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Refer Secondary Care and/or Advice & Guidance	Refer to Community Respiratory Services
• Disease onset at < 40 years old • Family history of alpha 1 antitrypsin deficiency • Consideration of lung volume reduction procedures • Diagnostic uncertainty • New symptoms not explained by COPD e.g. haemoptysis • Assessment for Long Term Oxygen Therapy (SpO2 < 92%) NB only eligible if Carbon Monoxide (CO) reading confirms ex-smoker for at least 3 months. Note some HOSAR services can assess in the community • Rapidly progressive or advanced disease • Complex infection (bronchiectasis/ NTM/ need for prophylactic antibiotics) • Consideration of domiciliary non-invasive ventilation and management of chronic respiratory failure	• Referral for pulmonary rehabilitation if MRC 3 or MRC 2 with exacerbations (code in EMIS) • Self-management support e.g. frequent exacerbations (e.g. 2 or more/year) • Disabling or frightening breathlessness • Identified need for and support with advanced care planning conversations • Concern about inappropriate use of rescue packs • Long term oxygen assessment in certain boroughs • Need for spirometry discussion/ MDT discussion • Consider if one or more hospital admissions in the last year • Need for assessment for compressor and nebulised medication (rarely recommended as handheld devices usually superior)

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Treatment options for COPD in adults

After confirmed diagnosis of COPD

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Offer high value interventions in COPD care:

- Treatment and ongoing support for tobacco dependence (see page 14)
- Annual influenza and COVID vaccinations; Pneumococcal vaccination (once or 5 yearly if asplenic, CKD or immune compromise)
- Pulmonary rehabilitation (if not contraindicated);
- Co-developed personalised self-management plan – please refer to LTC LCS supporting information;
- Optimise treatment for comorbidities (see page 16).

Revisit and enable these interventions at each review at least annually and before each step up

Start inhaled therapies if:

- High value interventions have been offered **and**
- Patient is suffering with exacerbations **and**
- Inhaled therapies are needed to relieve breathlessness and/or exercise limitation, **and**
- Principles and choices in inhaled therapy and **devices** discussed with patient **and**
- Patient has been trained to use specific devices and can demonstrate satisfactory technique

Review inhaler technique and adherence regularly

Tobacco Dependence

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Tobacco dependence: Identify and treat at every review. CODE Smoking status in EMIS.
• current smoker = someone that has smoked tobacco in the last 14 days. (vapers/e-cig users not classed as smokers)
Provide Very Brief Advice (VBA) on treating tobacco dependency - NCSCT. Make Every Contact Count, VBA should be delivered at every care contact.
Ask: assessing current smoking status (tobacco, cigarettes, shisha, cannabis, passive smoking etc)
Advice: The best treatment for tobacco dependency is combination NRT/pharmacotherapy alongside specialist support.
Act: Offer full range of **COMBINATION** nicotine replacement therapies (NRT) and / or varenicline/cytisine by trained HCP in line with local guidance and referral to quit smoking services for behavioural and psychological support. Ensure follow-up of tobacco dependence treatment arranged.
Measure CO routinely at every review of a current or recently quit smoker. Assess patient motivation to quit.
• Useful resources: London Clinical Senate - Helping Smokers Quit and PCRS Tobacco Dependency Guide
• **Stop Smoking Services:**
HARINGEY at **One You Haringey** or 020 8885 9095.
CAMDEN AND **ISLINGTON** at **Breathe** (via **breathe.team@nhs.net** or 020 3633 2609).
BARNET (via **nclicb.smokefreebarnet@nhs.net** or 0300 123 1044).
ENFIELD (via **Stop Smoking London** or 0300 123 1044).
National Centre for Smoking Cessation Training (NCSCT) https://www.ncsct.co.uk/
Community Stop Smoking service across London https://www.mecclink.co.uk/london/

Supported Self-Management and Pulmonary Rehabilitation

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Self-Management: offer personalised information on COPD e.g. “First steps to living with COPD” or a Care plan, **Asthma Lung UK website** as part of developing a care plan.

- Explore and develop patient confidence in self-management, including appropriateness of exacerbation pack
- Signpost to local patient support groups e.g. Breathe Easy - **Breathe Easy support groups**

Offer personalised physical activity advice to all patients e.g. Long-term exercise groups, singing, dance groups.

Pulmonary Rehabilitation: the “Breath Better Do More” programme

Explain, offer and refer to pulmonary rehabilitation (PR) every patient with breathlessness MRC ≥3 (or hospital admission for COPD or frequent exacerbations irrespective of MRC score, provided COPD diagnosis confirmed)

Useful Pulmonary Rehabilitation resource is a 2 minute film: **Pulmonary rehabilitation**

Refer to:

HARINGEY or **ISLINGTON** (**CORE Team** via **email** or 0207 288 5474).
CAMDEN (CNWL team via **email** or 020 3317 5355)
BARNET (Community Respiratory Team via **email** or 07943 828371)
ENFIELD (via email or 0204 553 5693)

Managing comorbidities

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Consider Comorbidity: assess for co-existing ischaemic heart disease, heart failure, diabetes and osteoporosis risk and treat as appropriate.

- BP
- ECG
- BNP and echo if needed
- Lipid profile – Q risk 3 approach
- HbA1c
- Osteoporosis risk assessment (especially in post-menopausal women) – FRAX score

Calculate BMI as raised BMI may mask obstructive spirometry but obesity is also a common contributing cause of breathlessness.

- If BMI >30 kg/m^2, excessive sleepiness and/or low O2 saturation measure venous bicarbonate & consider referral for respiratory assessment +/-sleep studies.
- Discuss and address concerns and impact of raised BMI and low BMI as for all patients.

COPD is not a contraindication to β_1 blockers, and β_1 blockers should be prescribed in COPD as for any patient according to cardiac or other indications.

Pathways for inhaled therapies for COPD

Clinicians can follow either Pathway A or B*

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Step 1

After diagnosis, offer SABA or SAMA (DPI or MDI with Spacer) if required for breathlessness

If the patient is limited by symptoms, i.e., breathlessness or has exacerbations despite treatment with SABA or SAMA, proceed to maintenance therapy and STOP SAMA. SABA as required may be continued at any stage

Step A2

NO asthmatic features

LABA/LAMA

Step A3

Ongoing symptoms
OR exacerbations

ICS/LABA/LAMA

Step B2

Asthmatic features/steroid responsiveness*

ICS/LABA/LAMA
(Preferred choice)

OR

ICS/LABA
(Intolerance to LAMA or existing patients stable on this)

Step B3

Ongoing symptoms
OR exacerbations

ICS/LABA/LAMA

IF CONCERN AROUND DIAGNOSIS OR PATIENT CONTINUES TO EXACERBATE DESPITE TRIPLE THERAPY, CONSIDER REFERRAL FOR SPECIALIST REVIEW

- *There is a lack of consistency amongst definitions for COPD patients who may demonstrate "steroid responsiveness". NICE defines asthmatic features/features suggesting steroid responsiveness as "any previous secure diagnosis of asthma or atopy, a higher blood eosinophil count, substantial variation in FEV1 over time (at least 400ml) or substantial diurnal variation in peak expiratory flow (at least 20%)". GOLD criteria of steroid responsiveness is defined by those who have eosinophils ≥300 cells/microlitre. Further research into the exact features of inhaled corticosteroid responsiveness is required.*
- *NCL JFC understood the role of LAMA regardless of their eosinophil count and hence should be available for all COPD patients. NICE guidance suggests ICS/LABA as an initial maintenance therapy in the same setting (i.e., without LAMA). NCL respiratory specialists would normally opt for ICS/LABA/LAMA as the preferred initial maintenance for patients with a confirmed diagnosis of COPD and asthmatic features or features suggesting steroid responsiveness. Patients stabilised on ICS/LABAs should not be switched to a different inhaler unless a clinical benefit is identified.*

Inhaled reliever therapy options (SABA or SAMA as required)

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- After confirmation of diagnosis, offer a short-acting bronchodilator as required to relieve breathlessness and exercise limitation. This can either be a short-acting beta$_2$ agonist (SABA) or a short-acting muscarinic antagonist (SAMA), both as DPI or MDI with spacer.
- **Ventolin® Evohaler should NOT be prescribed in NCL.** Although Salamol® CFC-Free inhaler is defined as having a 'high' carbon footprint, it has half the carbon footprint of Ventolin® Evohaler. Please ensure salbutamol is always prescribed by brand name, using the brands listed below.
- Note: Salamol contains a small amount of ethanol which may be unsuitable for some patients due to religious, cultural or personal reasons; clinicians are encouraged to discuss with their patient to determine a suitable alternative formulary option. If a pMDI is required, it would be appropriate to use a non-formulary pMDI as an exceptional circumstance.
- Inform the patient that if inspiratory force is impaired to the extent where they cannot use their inhaler device, they should seek immediate medical attention (alternatives to DPIs include salbutamol pMDI plus spacer or salbutamol via nebuliser).
- Inform patients that if symptoms persist, they should return to their GP for further evaluation and possibly a change in therapy.

Easyhaler Salbutamol 100mcg/dose
Salbutamol 100micrograms/dose dry powder inhaler

2 doses QDS as required

Carbon footprint: LOW | DPI

Ventolin Accuhaler 200mcg/dose
Salbutamol 200micrograms/dose dry powder inhaler

1 dose as required (max 1 dose QDS)

Carbon footprint: LOW | DPI

Salamol CFC-Free inhaler 100mcg/dose
Salbutamol 100micrograms/dose inhaler CFC free

2 doses QDS as required

Carbon footprint: HIGH | pMDI

Salamol Easi-Breathe 100mcg/dose
Salbutamol 100micrograms/dose breath actuated inhaler CFC free

2 doses QDS as required

Carbon footprint: HIGH | BAI

Atrovent pMDI
Ipratropium bromide 20micrograms/dose inhaler

2 doses QDS as required

Carbon footprint: HIGH | pMDI

LABA/LAMA maintenance treatment (steps A2)

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- If breathlessness or exacerbations continue, offer long-acting beta2 agonist (LABA) and long-acting muscarinic antagonist(LAMA). Discontinue SAMA if LAMA is given. SABA as required may be continued in all stages of COPD.

- Studies show that combining different classes of long-acting bronchodilators can lead to improvements in lung function and clinical outcomes compared to using one type of bronchodilator. These benefits were observed in studies with LABA/LAMA combinations, found to be effective in improving lung function, reducing breathlessness, alleviating symptoms, enhancing health status, decreasing exacerbations and the use of rescue medication, with similar safety profiles and lower incidence of pneumonia compared to an inhaled corticosteroid (ICS)/LABA combination. [1]

- LABA/LAMA combination inhalers used as maintenance treatment are recommended by both NICE and GOLD.

Option 1

Anoro Ellipta
Umeclidinium / Vilanterol dry powder inhaler

55/22 micrograms device: 1 dose OD

Carbon footprint: LOW | DPI

Option 2

Bevespi Aerosphere
Glycopyrronium / Formoterol inhaler

7.2/5 micrograms device: 2 doses BD

Carbon footprint: HIGH | pMDI

(1) Ficker JH, Rabe KF, Welte T. Role of dual bronchodilators in COPD: A review of the current evidence for indacaterol/glycopyrronium. Pulm Pharmacol Ther. 2017 Aug;45:19-33. doi: 10.1016/j.pupt.2017.04.002. Epub 2017 Apr 4. PMID: 28389258.

ICS/LABA maintenance treatment (steps B2)

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- Inhaled corticosteroids (ICS)/LABA combination inhalers used as maintenance treatment are recommended in NICE guidance but no longer recommended in GOLD guidance.
- NCL clinicians usually opt for LABA/LAMA as initial maintenance treatment in patients without signs of steroid responsiveness.
- Patients should not be routinely commenced on ICS/LABA inhaled therapy.
- ICS/LABA combination inhalers have been historically used in NCL primary care. Patients stable on maintenance therapy with ICS/LABA should remain on this treatment. If a patient is receiving an ICS/LABA in a pMDI format, clinicians may wish to discuss the inhaler choice with their patient to consider switching to a DPI if suitable and clinically appropriate.
- ICS/LABA combination inhalers will still be available for patients with known intolerance or hypersensitivity to LAMAs.
- Always offer both a steroid treatment card AND a steroid emergency card.

Option 1				Option 2	
Relvar Ellipta **Fluticasone furoate/ Vilanterol dry powder inhaler** 92/22 micrograms device: 1 dose OD **Carbon footprint: LOW** — **DPI**		**Fostair NEXThaler** **Beclometasone/ Formoterol inhaler** 100/6 micrograms device: 2 doses BD **Carbon footprint: LOW** — **DPI**		**Fostair pMDI** **Beclometasone/ Formoterol inhaler** 100/6 micrograms device: 2 doses BD **Carbon footprint: HIGH** — **pMDI**	

ICS/LABA/LAMA (triple therapy) maintenance treatment (steps B2, A3 and B3)

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The following treatment options are recommended in both NICE and GOLD guidance:

- **In patients with a confirmed COPD diagnosis who have features suggesting steroid responsiveness and continue to be breathless or have exacerbations, and have previously received a SABA or SAMA only (step B2) - as reviewed and agreed by NCL JFC:**
  - ➢ Offer a triple therapy combination inhaler as an initial maintenance treatment option.

- **In patients established on a LABA/LAMA or ICS/LABA combination inhaler (steps A3 and B3)**
  - ➢ Escalate to triple therapy in patients who have a severe exacerbation (requiring hospitalisation) or at least two moderate exacerbations (requiring systemic corticosteroids and/or antibacterial treatment) within a year
  - ➢ Escalate to triple therapy in patients whose day-to-day symptoms continue to adversely impact their quality of life:
    - ❑ If previously using an ICS/LABA, escalate to triple therapy.
    - ❑ If previously using a LABA/LAMA, consider a 3-month trial of triple therapy. If symptoms have improved, continue triple therapy. If there has been no improvement, step back down to a LAMA and LABA combination.

- Review at least annually and document the reason for continuation.
- Discontinue SAMA treatment if a LAMA is given. Treatment with a SABA as required may be continued in all stages of COPD.
- Always offer both a steroid treatment card AND a steroid emergency card.
- If the patient remains unstable or experiences further exacerbations whilst on triple therapy, consider a referral to a COPD specialist clinic for assessment of further treatment options (e.g., roflumilast as per NICE TA461, oral morphine for breathlessness, regular antibiotic prophylaxis as per national guidance, etc.)

Option 1

Trelegy Ellipta

Fluticasone / Vilanterol / Umeclidinium dry powder inhaler

Triple therapy:
92/22/55 micrograms device: 1 dose OD

Carbon footprint: LOW | **DPI**

Trimbow NEXThaler

Beclometasone dipropionate/ Formoterol fumarate dihydrate/ Glycopyrronium bromide dry powder inhaler

Triple therapy:
87/5/9 micrograms device: 2 doses BD

Carbon footprint: LOW | **DPI**

Option 2

Trimbow

Beclometasone dipropionate/ Formoterol fumarate dihydrate/ Glycopyrronium bromide inhaler

Triple therapy:
87/5/9 micrograms device: 2 doses BD

Carbon footprint: HIGH | **pMDI**

Inhaled therapy prescribing advice

- **PRESCRIBE ALL INHALERS BY BRAND NAME AND DEVICE INCLUDING SALBUTAMOL pMDI (preferred pMDI brand: SALAMOL®)**
- **PATIENTS SHOULD ONLY BE SWITCHED BETWEEN INHALER DEVICES IF CLINICALLY APPROPRIATE AND FOLLOWING A FACE-TO-FACE CONSULTATION AND WITH COUNSELLING.**

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Choose the inhaler device most appropriate for the patient based on:

- **Patient willingness and ability to use a particular device;**
- **Assessed inhaler technique including inspiratory flow and review regularly;**
- **Patient preference;**
- **Patient's inhaler knowledge, beliefs and use – address any inaccuracies;**
- **Carbon footprint of the inhaler.**

MDIs:

- MDIs generally have the highest carbon footprint of all inhaler devices;
- Are still an appropriate inhaler choice if a dry powder or soft mist inhaler are not appropriate or if a patient prefers this device;
- Should always be used with a spacer (except salbutamol). Spacers should be replaced every 6 months.

Inhaled corticosteroids (ICS):

- Do NOT use single component ICS inhalers in COPD.
- ICS should only be started, or restarted, if the patient meets criteria highlighted in slide 20 and slide 21.
- If ICS has been stopped, risk/benefits should be assessed before restarting.

Stepping up treatment:

Only step-up inhaled therapy after:

- Addressing or readdressing tobacco dependence.
- After review and optimisation of inhaler technique and pattern of inhaler use.

Stepping down treatment:

- Consider stepping down treatment as actively as stepping up.
- Titrate ICS to the lowest effective dose to prevent airways exacerbations and/or asthma symptoms.
- Withdrawal of ICS may be indicated for patients with NO features suggesting steroid responsiveness or where ICS not beneficial.

Refer to Primary Care Respiratory Society (PCRS) Stepping Down ICS guidance

Patients requiring further support to optimise inhaler use and technique can be referred to their community pharmacy

Acute exacerbation on COPD (AECOPD) Treatment Guidelines

Exacerbations are associated with: ↑ breathlessness, ↑ sputum purulence, ↑ sputum volume, ↑ cough.
Consider other causes of worsening COPD as an alternative diagnosis.
Educate patients regarding symptoms of exacerbation, how to distinguish from 'bad days' and what action to take early for proactive treatment. Agree a personalised action plan on responding to symptoms.

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Treatment exacerbations with

Increasing frequency of bronchodilator (i.e., SABA) use

Oral prednisolone (non-enteric coated) 5mg tablets: 30mg OM for 5 days (unless contraindicated)

Patients having more than 3 courses of prednisolone / 12 months need review to minimise cumulative dose, risk of adrenal insufficiency and risk of osteoporosis

Consider 5-day course of oral antibiotics (if purulent sputum):

- **Amoxicillin 500mg TDS OR**
- **Doxycycline 200mg day 1, then 100mg OD for 4 days OR**
- **Clarithromycin 500mg BD**

Consider alternative antibiotic e.g. co-amoxiclav 625mg TDS if higher risk of treatment failure

- All patients should be reviewed face to face (or via video consultation if appropriate) after an exacerbation to code (SNOMED) the episode, discuss next steps e.g., association with tobacco smoking, pulmonary rehabilitation referral, review of oxygen saturation and medication and need for specialist respiratory review

'Exacerbation medication packs', a.k.a. 'Rescue packs'

- An 'exacerbation' or 'rescue pack' is a course of corticosteroid tablets and antibiotics for a patient to keep at home. Instructions for use include contacting a healthcare professional if a pack is used or if their symptoms do not improve within 24 hours of starting the treatment.
- Establish understanding of, and confidence in, managing exacerbations before prescribing an 'exacerbation' or 'rescue pack'.
- Review the need for and use of this exacerbation medication regularly.
- **Do not issue as a <u>repeat</u> prescription**, only via acute prescription.
- Consider appropriateness of issuing a pack e.g., where a patient has cognitive impairment; communication is made more difficult by language barriers and any other situation where you do not feel confident that instructions have been understood.
- If a second 'exacerbation' or 'rescue pack' is used within 8 weeks, consider:
  - sending sputum sample for MC & S (microscopy, culture, and sensitivity) **<u>and</u>**
  - an alternative first choice antibiotic (from a different class of doxycycline, amoxicillin, clarithromycin)

References and additional resources

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References:

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Additional resources:

- NICE guideline, “Chronic obstructive pulmonary disease in over 16s: diagnosis and management”, [NG115], Published: 05 December 2018, Last updated: 26 July 2019. Accessed August 13, 2025 https://www.nice.org.uk/guidance/ng115/resources/chronic-obstructive-pulmonary-disease-in-over-16s-diagnosis-and-management-pdf-66141600098245
- 2025 Gold Report - Global Initiative for Chronic Obstructive Lung Disease (2024) GOLD. Accessed August 13, 2025 Available at: GOLD-2025-Report-v1.0-15Nov2024_WMV.pdf
- Greener Practice: How to reduce the carbon footprint of inhaler prescribing: Accessed August 13, 2025 https://www.greenerpractice.co.uk/

Appendix 1: Inhalers on the NCL Joint Formulary

Step 1

After diagnosis, offer SABA or SAMA (DPI or MDI with Spacer) if required for breathlessness

Easyhaler Salbutamol
Salbutamol – 6 month expiry once opened

2 doses QDS as required

CO_2: LOW

DPI

Ventolin Accuhaler
Salbutamol – NOTE: 200micrograms/dose

1 dose as required (max 1 dose QDS)

CO_2: LOW

DPI

Salamol CFC-Free inhaler
Salbutamol – contains ethanol

2 doses QDS as required

CO_2: HIGH

pMDI

Salamol Easi-Breathe
Salbutamol

2 doses QDS as required

CO_2: HIGH

BAI

Atrovent pMDI
Ipratropium

2 doses QDS as required

CO_2: HIGH

BAI

If the patient is limited by symptoms, i.e. breathlessness or has exacerbations despite treatment with SABA or SAMA, proceed to maintenance therapy

Step A2 — NO features of steroid responsiveness

LABA & LAMA

Anoro Ellipta
Umeclidinium / Vilanterol

55/22 mcg device
1 dose OD

CO_2: LOW

DPI

Bevespi Aerosphere
Glycopyrronium / Formoterol

7.2/5 mcg device
2 doses BD

CO_2: HIGH

pMDI

Step B2 — Asthmatic features or signs of steroid responsiveness

ICS/LABA/LAMA OR **ICS/LABA**

Fostair Nexthaler
Beclometasone/ Formoterol

100/6 mcg device
2 doses BD

CO_2: LOW

DPI

Fostair pMDI
Beclometasone/ Formoterol

100/6 mcg device
2 doses BD

CO_2: HIGH

pMDI

Relvar Ellipta
Fluticasone furoate/ Vilanterol

92/22 mcg device
1 dose OD

CO_2: LOW

DPI

Trelegy Ellipta
Fluticasone / Vilanterol / Umeclidinium

92/22/55 mcg device
1 dose OD

CO_2: LOW

DPI

Step A3 — Ongoing symptoms OR exacerbations

ICS/LABA/LAMA

Trimbow Nexthaler
Beclometasone/Formoterol/Glycopyrronium

87/5/9 mcg device
2 doses BD

CO_2: LOW

DPI

Trimbow pMDI
Beclometasone/Formoterol/Glycopyrronium

87/5/9 mcg device
2 doses BD

CO_2: HIGH

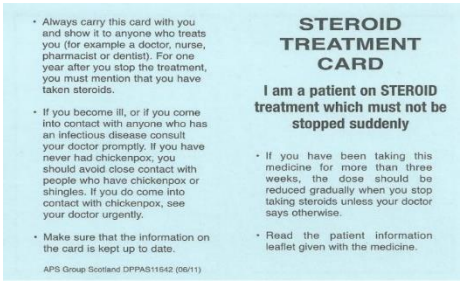
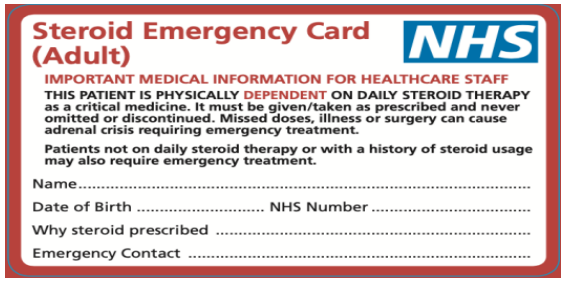
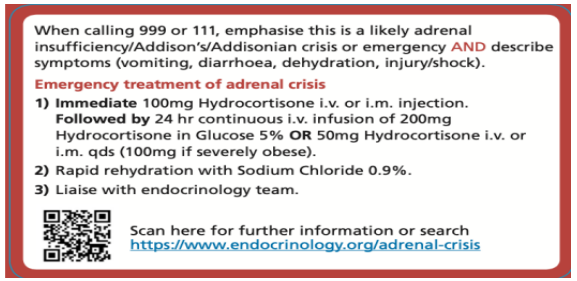
pMDI

Step B3 — Ongoing symptoms OR exacerbations

ICS/LABA/LAMA

IF CONCERN AROUND DIAGNOSIS OR PATIENT CONTINUES TO EXACERBATE DESPITE TRIPLE THERAPY, CONSIDER REFERRAL FOR SPECIALIST REVIEW

Appendix 2: Steroid safety cards in adults with COPD prescribed ICS or systemic steroids[6–7]

	Steroid TREATMENT card	Steroid EMERGENCY card
		 
Purpose	To make patients aware of the risks involved with high-dose or prolonged courses of corticosteroids and to record details of the prescriber, drug, dosage, and duration This should be provided by the initiating clinician/centre, but check on every patient contact that the patient has a treatment card	For patients with or at risk of developing adrenal insufficiency from exogenous steroids for whom missed doses, illness or surgery put them at risk of adrenal crisis This should be provided by the prescribing clinician, and the dispensing pharmacist should check that the patient has an emergency card
When to provide a steroid safety card	**Supply** a steroid treatment card to patients on: • High dose ICS (≥1000micrograms BDP/day equivalence) • Oral corticosteroids for >3 weeks or >4 short courses in one year **Consider** supplying a steroid treatment card to patients on medium dose ICS (≥ 400micrograms to <1000micrograms BDP equivalence). Risks increase with concomitant use of intranasal and/or topical corticosteroids, or with medicines that inhibit metabolism of corticosteroids (cytochrome p450 inhibitors, such as ritonavir, itraconazole or ketoconazole)	**Supply** a steroid emergency card to patients: • On high dose ICS (≥1000micrograms BDP/day equivalence) • On prednisolone 5mg/day or equivalent for ≥4 weeks across all administration routes (oral, inhaled, topical or intranasal) • Patients taking >40mg prednisolone or equivalent for >1 week or repeated courses of short oral doses • Patients taking an oral glucocorticoid within 1 year of stopping long-term therapy • Patients with established or suspected primary adrenal insufficiency (e.g., Addison's disease, congenital adrenal hyperplasia etc) • Patients with established or suspected diagnosis of adrenal insufficiency due to hypothalamo-pituitary disease who are on permanent glucocorticoid replacement therapy or require glucocorticoids during illness or stress such as surgery See more information via the NPSA alert and advice from SPS/Society for Endocrinology

Appendix 3: How to use this guide

Brand name
Note: ALWAYS prescribe by brand name AND inhaler type

Generic name

Device strength and dose

Photo of device

Carbon footprint:
Labelled as either LOW or HIGH

LOW carbon footprint items are preferred choices in NCL where it is clinically appropriate to use.

HIGH carbon footprint pMDIs contain a propellant which carry a higher carbon footprint relative to dry powder inhalers. These are suitable for use where patients are more suited to a pMDI (e.g., if they have poor inspiratory effort, or have better inhaler technique with a pMDI than other devices)

Example inhaler monograph

Fostair Nexthaler

Beclometasone/ Formoterol inhaler

100/6 micrograms device: 2 doses BD

Carbon footprint: LOW

DPI

Type of device:

pMDI = pressurised metered dose inhaler, which uses a propellant
BAI = breath-actuated inhaler, which also contains a propellant
SMI = soft mist inhaler, which contains a liquid but no propellant
DPI = dry powder inhaler, which contains no propellant

Scope of inhaled therapies included in this guideline

- This guide includes inhaler options currently on the NCL Joint Formulary which are recommended for use in NCL. It will be updated following pan-London recommendations; therefore, options are subject to change following NCL JFC or pan-London recommendations.
- Ventolin® has been removed from the NCL Joint Formulary and should not be initiated in new patients.
- Although a greener option compared to pMDIs, Spiolto Respimat® has not been included in this guideline. The decision has been based on both the lack of a direct escalation to triple inhaled therapy and the reported practicality issues with using the device itself. It has been removed from this guideline following overall review of treatment options and escalation therapies. However, patients currently on Spiolto Respimat® should not be switched to a different inhaler unless a clinical benefit is identified.
- MDI is chosen over DPI where inspiratory capacity is too low for effective use of DPI itself. An InCheck Dial device may be used to determine inspiratory capacity.

Abbreviations:
SABA = Short acting beta agonist
LABA = Long acting beta agonist
SAMA = Short acting muscarinic antagonist
LAMA = Long acting muscarinic antagonist
ICS = Inhaled corticosteroid
mcg = Microgram
BDP = Beclometasone Dipropionate (where used, this denotes the equivalent BDP dose relative to the steroid administered in the dose advised)
OD: Once daily; **BD**: Twice daily; **QDS**: Four times daily