NHS
Shropshire, Telford and Wrekin
Clinical Commissioning Group

NHS Shropshire, Telford and Wrekin (STW) CCG

Chronic Obstructive Pulmonary Disease (COPD)

Treatment Guidelines

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Document Control Sheet

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Document Amendment History

Version No.	Date	Brief Description
2.4	Sept 2021	Update of version 2.3. • Rebadging with the new CCG logo. • Replacement of the Duaklir Genuair (Formoterol /Aclidinium, LABA+LAMA) with the Bevespi(Formoterol/ Glycopyrronium, LABA+LAMA) alternative following the approval of the Trixeo inhaler by the APC. This is to ensure a direct therapy optimisation for patients on dual bronchodilator needing to move to the triple Trixeo. • Addition of the Trixeo triple therapy • Deletion of inhalers images

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Chronic Obstructive Pulmonary Disease (COPD)- Treatment Guidelines

Offer pulmonary rehabilitation to all patients with a MRC dyspnoea score of 3-5 or a score of 2 with functionally limiting breathlessness

Where appropriate the following should be offered before commencing inhaled treatment:

- **Offer treatment and support to stop smoking. Smoking cessation is the only intervention that reducesthe decline of lung function in COPD**
- **Ensure all patients are offered pneumococcal and annual influenza vaccinations**
- **Offer pulmonary rehabilitation to all patients with an MRC dyspnoea score of 3-5 or a score of 2 with functionally limiting breathlessness**
- **Optimise treatment for comorbidities**
- **Ensure all patients have a personalised self-management plan – revisit plan at every review or followingan admission**

Offer inhaled therapies to relieve breathlessness or exercise limitations

Short Acting Bronchodilators SABA or SAMA to be used as necessary

Person still breathless or has exacerbations despite treatment

NO asthmatic features/features suggesting steroid responsiveness*

Offer LABA+LAMA as a single inhaler

Person has day to day symptoms that adversely impact quality of life

Consider 3-month trial of LABA+LAMA+ICS as a single inhaler. If there is improvement, continue and review annually.
If no improvement, revert to LABA+LAMA (As a single inhaler).

Person has 1severe or 2 moderate exacerbations within a year

Consider LABA+ LAMA + ICS

Asthmatic features/features suggesting steroid responsiveness*

Consider LABA+ICS (As a single inhaler)

Person has day to day symptoms that adversely impact quality of life OR has 1 severe (needing hospitalisation) or 2 moderate exacerbations within a year

Offer LABA+LAMA+ICS (As a single inhaler)

Explore further treatment options if still limited by breathlessness or subject to frequent exacerbations.

Consider referral to the specialist respiratory team if exacerbation continues

SABA: short acting beta $_2$ agonist **SAMA**: short acting muscarinic antagonist **ICS:** inhaled corticosteroid **LABA**: long acting beta $_2$ agonist **LAMA**: long acting muscarinic antagonist

*Asthmatic features/features suggesting steroid responsiveness in this context include 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%).

People using long-acting bronchodilators outside of the recommendations of this guideline, should continue with their current treatment until both they and their NHS healthcare professional agree it is appropriate to change. Treatment should be discussed at the patient's COPD review. When discontinuing the ICS follow the - **Protocol for weaning COPD patients on Inhaled corticosteroids.**

Formulary Choices – Inhaled therapies (Prescribe by brand) Discuss the environmental impact when initiating patients on new inhalers or at clinical reviews.	
SABA	▪ Salbutamol 100 micrograms MDI – 1 or 2 puffs when needed for breathlessness ▪ Terbutaline 500 micrograms Turbohaler – 1 dose up to four times daily when required
SAMA	▪ Ipratropium 20 micrograms MDI - 2 puffs up to four times daily
LABA +LAMA	▪ Glycopyrronium/Formoterol (Bevespi) 7.2/5 micrograms – two puffs twice daily ▪ Vilanterol /Umeclidinium (Anoro) 22/55 Ellipta - one dose once daily
ICS +LABA	▪ Beclometasone 100 micrograms/formoterol 6 micrograms (Fostair MDI) - two puffs twice daily ▪ Beclometasone 100 micrograms/formoterol 6 micrograms (Fostair NEXT DPI) - two puffs twice daily ▪ Budesonide 200 micrograms/formoterol 6 micrograms (Symbicort 200/6 MDI) - two puffs twice daily ▪ Budesonide 400 micrograms/formoterol 12 micrograms (Symbicort 400/12 DPI) - one puff twice daily ▪ Vilanterol/Fluticasone (Relvar) 22/92microgram Ellipta - one dose once daily
LAMA +LABA + ICS	▪ Beclometasone 87 micrograms/formoterol 5 micrograms/9 micrograms of glycopyrronium(Trimbow MDI) - two puffs twice daily ▪ Umeclidinium/Vilanterol /Fluticasone/(Trelegy) 55/22/92 micrograms Ellipta - one puff once daily ▪ Formoterol 5micrograms/glycopyrronium 7.2 micrograms/160microgram of budesonide (Trixeo Aerosphere MDI)- two puffs twice daily

Inhaled treatment

- Choose a drug based on the person's symptomatic response and ability to use the device, the drug's side effects, potential to reduce exacerbations and cost.
- Minimise the number of inhalers and the number of different types of inhaler used by each person as far as possible.
- **Check inhaler technique at every review**
- Be aware of the potential risk of developing side effects (including pneumonia) in people with COPD treated with inhaled corticosteroids and discuss risks with the patient. Document in the clinical records reasons for continuing ICS treatment.
- Do not assess the effectiveness of therapy using lung function alone. Include a variety of measures such as improvement in symptoms, activities of daily living, exercise capacity and rapidity of symptom relief.

Oral mucolytic therapy

- Do not routinely use mucolytic drugs to prevent exacerbations in people with stable COPD.
- Consider mucolytic drug therapy for people with a chronic cough productive of sputum.
- Only continue mucolytic therapy if there is symptomatic improvement after 4 weeks (for example,reduction in frequency of cough and sputum production).
- Prescribe carbocisteine 750mg three times daily for four weeks. If no benefit after four weeks, stop. Ifbeneficial continue, reducing to 750mg twice daily once a satisfactory response is achieved (capsules 375mg/sachet 750mg/10ml)

Oral corticosteroids

Long-term use of oral corticosteroid therapy in COPD is not normally recommended.
Some patients with advanced COPD may need long-term oral corticosteroids if treatment cannot be stopped after an exacerbation. Keep the dose as low as possible, monitor for osteoporosis and offer prophylaxis if indicated.

Theophylline (Prescribe by brand name - Uniphyllin Continus)

- Offer only after trials of short and long-acting bronchodilators or to people who cannot use inhaled therapy as plasma levels and interactions need to be monitored.
- Take care when prescribing to older people because of differences in pharmacokinetics, increased co-morbidities and interactions with other medications.
- Assess the effectiveness of theophylline by improvements in symptoms, activities of daily living,exercise capacity and lung function.
- Prescribe slow release formulations by brand name only.
- Reduce the dose of theophylline for people who are having an exacerbation if they are prescribed macrolide or fluoroquinolone antibiotics (or other drugs known to interact).

Managing Exacerbations (https://www.nice.org.uk/guidance/ng114)

COPD Exacerbation: A sustained acute-onset worsening of the person's symptoms from their usual stable state, which goes beyond their normal day-to-day variations. Commonly reported symptoms are worseningbreathlessness, cough, increased sputum production and change in sputum colour

Encourage people with COPD to respond promptly to exacerbation symptoms by following their actionplan, which may include:

- adjusting their short-acting bronchodilator therapy to treat their symptoms
- taking a short course of oral corticosteroids if their increased breathlessness interferes with activitiesof daily living
- adding oral antibiotics if their sputum changes colour and increases in volume or thickness beyondtheir normal day-to-day variation
- informing their healthcare professional (ensure all reported exacerbations are read coded in the patient's medical record (acute exacerbation of chronic obstructive airways disease - read code H3122)

Pharmacological Management:

- If symptoms are predominantly wheeze/breathlessness – increase frequency of SABA use (add aspacer if necessary). If available, SABA can be administered via a nebuliser.
- In the absence of significant contraindications, consider oral corticosteroids for people in the community who have an exacerbation with a significant increase in breathlessness that interferes withdaily activities.
- Prescribe Prednisolone 5mg Tablets - 30mg (six tablets) once daily for 5 days (orally)
- When considering antibiotics, take into account:
  - the severity of symptoms, particularly sputum colour changes and increases in volume or thicknessbeyond the person's normal day-to-day variation
  - whether they may need to go into hospital for treatment
  - previous exacerbation and hospital admission history, and the risk of developing complications
  - previous sputum culture and susceptibility results
  - the risk of antimicrobial resistance with repeated courses of antibiotics

First Line:

- **Amoxicillin 500mg – one capsule three times daily (5 days)**
- **Doxycycline 100mg - 200mg day one THEN 100mg daily (5 days total including loading dose)**

Second Line:

- **Co-Amoxiclav 625mg – 1 tablet three times daily (5 days)**

Alternative choice oral antibiotic (if person at higher risk of treatment failure). People who may be at higher risk of treatment failure include people who have had repeated courses of antibiotics, a previous or current sputum culture with resistant bacteria, or people at higher risk of developing complications

COPD Exacerbation – Self Management Plans

Develop an individualised exacerbation action plan in collaboration with each person with COPD who is at risk ofexacerbations.

Offer people a short course of oral corticosteroids (Prednisolone 5mg tablets - 30 mg once daily for 5 days) and a shortcourse of oral antibiotics (Amoxicillin 500mg – 1 capsule three times daily for 5 days OR Doxycycline 100mg – 2 capsules on day one then one daily thereafter for 5 days total course) to keep at home as part of their exacerbation action plan if:

- they have had an exacerbation within the last year and remain at risk of exacerbations
- they understand and are confident about when and how to take these medicines, and the associated benefitsand harms
- they know to tell their healthcare professional when they have used the medicines and to ask for replacements. Requests for emergency exacerbation steroids and antibiotics must be evaluated before theyare re-issued, they should not be available as repeat medication

At all review appointments, discuss corticosteroid and antibiotic use with people who keep these medicines at home tocheck that they still understand how to use them. **For people who have used 3 or more courses of oral corticosteroids and/or oral antibiotics in the last year, investigate the possible reasons for this.**

Oral prophylactic antibiotic therapy in COPD

Prophylactic antibiotic therapy should only be considered following review with a respiratory specialist

Consider azithromycin 250mg tablets - ONE tablet 3 times a WEEK for people with COPD if they:

- do not smoke **AND**
- have optimised non-pharmacological management and inhaled therapies, relevant vaccinations and(if appropriate) have been referred for pulmonary rehabilitation **AND**
- continue to have 1 or more of the following, particularly if they have significant daily sputumproduction:
    - frequent (typically 4 or more per year) exacerbations with sputum production
    - prolonged exacerbations with sputum production
    - exacerbations resulting in hospitalization

Before offering prophylactic antibiotics, ensure that the person has had:

- sputum culture and sensitivity (including tuberculosis culture), to identify other possible causes of persistent or recurrent infection that may need specific treatment (for example, antibiotic-resistantorganisms, atypical mycobacteria or *Pseudomonas aeruginosa*)
- training in airway clearance techniques to optimise sputum clearance
- a CT scan of the thorax to rule out bronchiectasis and other lung pathologies

Before starting azithromycin, ensure the person has had:

- an electrocardiogram (ECG) to rule out prolonged QT interval and
- baseline liver function tests

- When prescribing azithromycin, advise people about the small risk of hearing loss and tinnitus and tellthem to contact a healthcare professional if this occurs.
- Review prophylactic azithromycin after the first 3 months and then at least every 6 months.
- Only continue treatment if the continued benefits outweigh the risks.
- For people who are taking prophylactic azithromycin and are still at risk of exacerbations, provide a non-macrolide antibiotic to keep at home as part of their exacerbation action plan (see COPD exacerbation self-management plans above).
- It is not necessary to stop prophylactic azithromycin during an acute exacerbation of COPD.

COPD Patient Review

Review people with stable COPD at least once per year and more frequently if indicated. Patients with more severeCOPD should be reviewed in primary care at least twice per year

Clinical assessment

- Smoking status and motivation to quit
- Adequacy of symptom control:
  – breathlessness
  – exercise tolerance
  – estimated exacerbation frequency
- Need for pulmonary rehabilitation
- Presence of complications
- Effects of each drug treatment (check adherence/(compliance with all prescribed medicines at every opportunity)
- Inhaler technique (ensure spacers are used with MDI's)
- Need for referral to specialist

Measurements to make

- FEV1 and FVC
- calculate BMI
- MRC dyspnoea score

The MRC Breathlessness Scale (This scale does not measure breathlessness itself, but the disability caused by breathlessness)	
1	Not troubled by breathlessness except on strenuous exercise
2	Short of breath when hurrying or walking up a slight hill
3	Walks slower than contemporaries on the level because of breathlessness, or has to stop for breath when walkingat own pace
4	Stops for breath after about 100m or after a few minutes on the level
5	Too breathless to leave the house, or breathless when dressing or undressing

Education

At diagnosis and at each review appointment, offer people with COPD and their family members or carers (asappropriate):

- written information about their condition
- opportunities for discussion with a healthcare professional who has experience in caring for people with COPDEnsure the information provided is: available on an ongoing basis, relevant to the stage of the person's condition and tailored to the person's needs.

Information should cover:

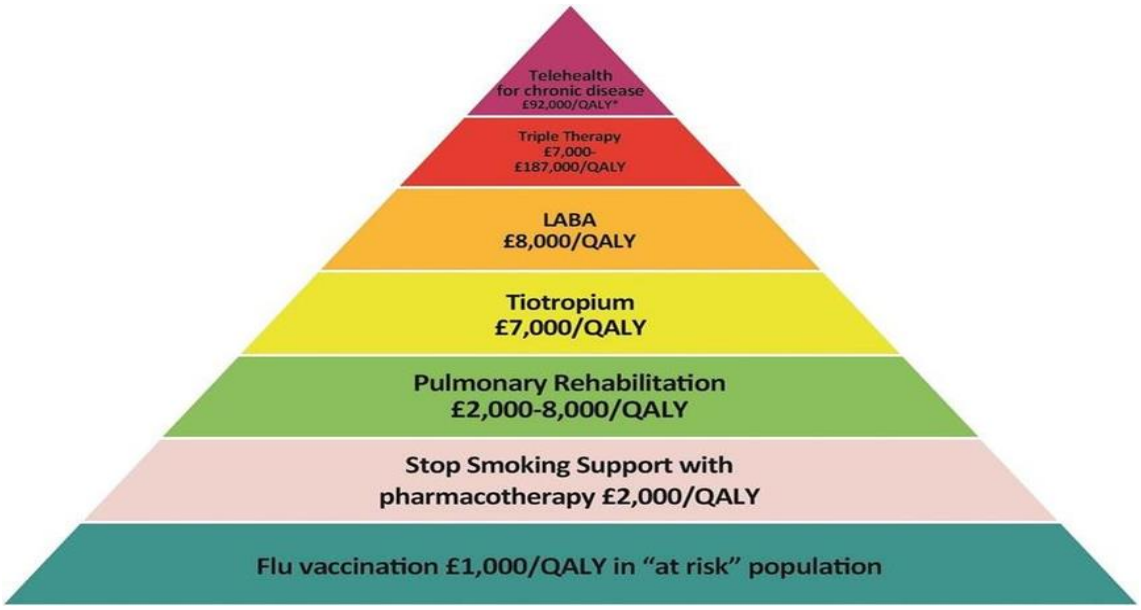
- an explanation of COPD and its symptoms
- advice on quitting smoking (if relevant) and how this will help with the person's COPD
- advice on avoiding passive smoke exposure
- managing breathlessness
- physical activity and pulmonary rehabilitation
- medicines, including inhaler technique and the importance of adherence
- vaccinations (pneumococcal and annual influenza vaccinations)
- identifying and managing exacerbations
- details of local and national organisations and online resources that can provide more information and support
- how COPD will affect other long-term conditions that are common in people with COPD (for example,hypertension, heart disease, anxiety, depression and musculoskeletal problems).

Personal Plans

Review the patient's personal COPD plan and encourage people with COPD to respond promptly to exacerbationsymptoms by following their self-management plan.

Assessing the values of treatment interventions in COPD

Adapted from - Value pyramid for COPD (The London Respiratory Team 2013)



The health benefits are expressed as quality-adjusted life years (QALYs). Generally, we consider that interventions costing the NHS less than £20,000 per QALY gained are cost effective. Those costing between £20,000 and £30,000 per QALY gained may also be deemed cost effective.

NB. The cost/QALY for triple therapy in COPD (i.e. an ICS plus LAMA plus LABA) is between £7,000 and £187,000, the upper limit of which is well above the NICE threshold of £21,000 per QALY for a treatment to be regarded as cost effective

Non-drug interventions and lifestyle advice such as stopping smoking, flu vaccination and pulmonary rehabilitation are more cost effective than COPD drug treatments and these measures should be offered and uptake maximised in all COPD patients. Ensuring that these measures are being used will ultimately reduce expenditure on prescribing as patients will be better managed. Patient education and self-care are also key components of COPD management.

Review patients on triple therapy. Only prescribe ICS for patients with **Asthmatic features/ features suggesting steroid responsiveness**. When considering ICS in COPD, clinicians should weigh the possible benefits such as reduced exacerbations and improved quality of life, with the potential adverse effects, particularly an increased risk of pneumonia. Issue steroid warning cards to patients on high dose ICS.

Identify patients with FEV1 ≥50% with less than two exacerbations in the last 12 months prescribed an ICS (as dual therapy or triple therapy). Where appropriate, consider a stepwise reduction of ICS whilst maintaining treatment with a bronchodilator or a combination of bronchodilators, i.e. LABA and LAMAs. Ensure that a multidisciplinary approach is adopted to carefully identify exacerbation risk and ensure regular review of patients when stepping down.

For patients suffering adverse effects of high dose ICSs, consider discussion about alternative treatments including long-acting bronchodilators.