Guidelines for the Pharmacological Management of Chronic Obstructive Pulmonary Disease (COPD) in Primary Care

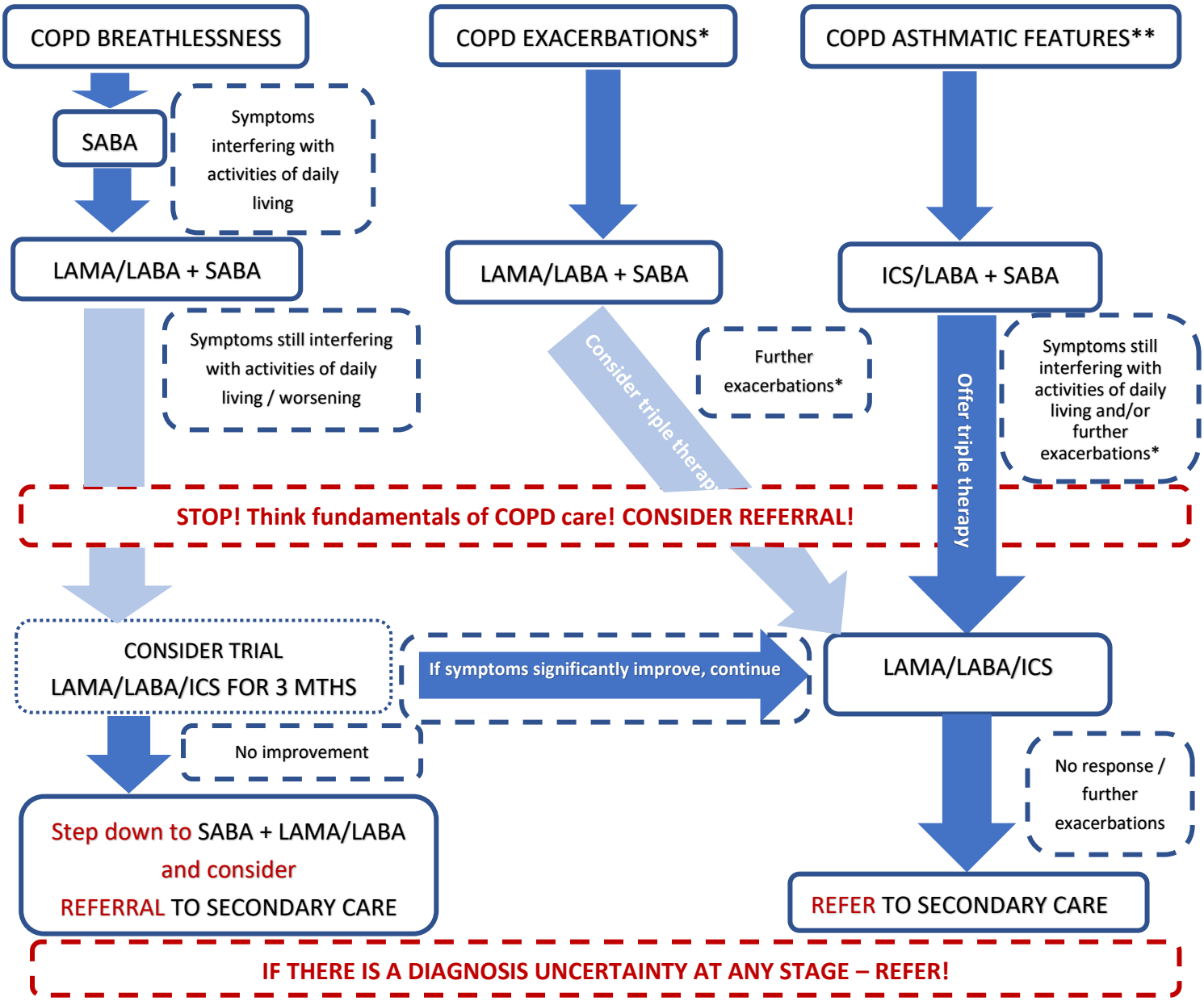
NHS
Bath and North East Somerset, Swindon and Wiltshire
Clinical Commissioning Group

COPD is diagnosed in the presence of characteristic symptoms (cough, shortness of breath) and confirmed by post bronchodilator spirometry (absolute AND % predicted). Do CXR, FBC, BMI. Then:

Start treatment with the Fundamentals of COPD care (see p3). These treatments and plans should be revisited at every review.

- Offer pneumococcal and influenza vaccinations
- Offer treatment and support to stop smoking (p3)
- Offer pulmonary rehabilitation if indicated (MRC ≥3)
- Encourage patients to increase their activity level/ exercise
- Co-develop a personalised self-management plan
- Optimise treatment for comorbidities including optimising BMI

Start inhaled therapies **only** if all the above interventions have been offered (if appropriate), and inhaled therapies are needed to relieve breathlessness or exercise limitation.



BEFORE CHANGING ANY MEDICATION AT ANY STEP: Recheck **diagnosis**. Check **inhaler technique** and compliance. Consider smoking status and **offer stop smoking support** if needed (p3). Consider **co-morbidities** and optimise treatment for these where possible. Is patient suitable for pulmonary rehabilitation or referral for oxygen assessment?

***Exacerbations** ≥1 requiring hospitalization and/or ≥2 moderate treated in community

**** Asthmatic features**/features suggesting steroid responsiveness – any previous, secure diagnosis of asthma or of 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%). See page 2 for further clarification on ICS/ triple therapy strategy.

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FORMULARY INHALER OPTIONS (ALWAYS PRESCRIBE INHALERS BY BRAND NAME) *Steroid card required for those on high dose inhaled steroids (≥1000 mcg BDP or equivalent/day)*		
	DPI (breathing technique: hard fast & deep) low CO2e	**pMDI (breathing technique: slow, gentle, long)**
SABA (all pts)	Salbutamol **EASYHALER** 100mcg 2 puffs PRN	Salbutamol **SALAMOL pMDI** 100mcg 2 puffs PRN via Aerochamber
	Terbutaline **BRICANYL TURBOHALER** 0.5mg 1 puff PRN	
LAMA/LABA	Glycopyrronium/Indacaterol **ULTIBRO BREEZHALER** 43/85 1 puff OD	Tiotropium/Olodaterol **SPIOLTO RESPIMAT** 2.5/2.5 - 2 puffs OD Glycopyrronium/Formoterol **BEVESPI AEROSPHERE** 7.2/5 – 2 puffs BD via Aerochamber
	Umeclidinium/Vilanterol **ANORO ELLIPTA** 55/22 1 puff OD	
	Aclidinium/Formoterol **DUAKLIR GENUAIR** 340/12 1 puff BD	
ICS/LABA	Beclomethasone/Formoterol **FOSTAIR NEXTHALER** 100/6 2 puffs BD	Beclomethasone/Formoterol **FOSTAIR pMDI** 100/6 2 puffs BD via Aerochamber
	Fluticasone Furoate/Vilanterol **RELVAR ELLIPTA** 92/22 1p OD	
	Budesonide/Formoterol **FOBUMIX EASYHALER** 320/9 1p BD	
LAMA/LABA/ICS Triple therapy delivered via a single device is preferred.	Umeclidinium/Vilanterol/Fluticasone Furoate 55/22/92 **TRELEGY ELLIPTA** 1 puff OD Glycopyrronium/Formoterol/Beclomethasone 9/5/88 **TRIMBOW Nexthaler** 2 puffs BD	Glycopyrronium/Formoterol/Beclomethasone 9/5/87 **TRIMBOW pMDI** 2 puffs BD via Aerochamber Glycopyrronium/Formoterol/Budesonide 7.2/5/160 **TRIXEO AEROSPHERE** -2 puffs BD via Aerochamber
LAMA Monotherapy for **existing pts only**. Part of triple therapy 2nd line. See notes below.	Tiotropium **BRALTUS ZONDA** 10mcg 1 puff OD	Tiotropium **SPIRIVA RESPIMAT** 2.5mcg 2 puffs OD
	Aclidinium bromide **EKLIRA GENUAIR** 322mg 1 puff BD	

LAMA/LABA combination treatment increases FEV1, reduces symptoms and reduces exacerbations compared to monotherapy.[2] The additional benefits of dual vs. mono-bronchodilation are achieved without an apparent increase in adverse events.[3] Whilst recommended by both GOLD and NICE for patients with exacerbations of COPD, such use is not within license.

SABA = **S**ort **a**cting **β**2 **a**gonist
LABA = **L**ong **a**cting **β**2 **a**gonist
LAMA = **L**ong **a**cting **m**uscarinic **a**ntagonist
ICS = **I**nhaled **c**orticosteroid
MRC = **M**edical **R**esearch **C**ouncil

LAMA or LABA monotherapy is no longer recommended, however existing, well controlled patients can continue with current treatment until both they and their NHS professional agree it is appropriate to change.[1] (NG115) LAMA have a greater effect on exacerbation reduction compared with LABA.[2] See BSW formulary, Chapter 3 for inhaler options.

TRIPLE THERAPY LAMA/LABA/ICS delivered via a **single device** is preferred. Other option is a separate ICS/LABA plus LAMA device. Be aware of possible difficulties with compliance/inhaler technique as patients must learn to operate several different devices. This is also a more expensive option. Only use in case of active ingredient not available in triple device (Tiotropium or Aclidinium) and if clear, documented benefit for patient or where ICS needs to be titrated due to strong asthma component (treated as asthma rather than COPD, follow asthma guidance) – exercise clinical judgement and document in the patient notes.

ICS treatment risk/benefit:
Be aware of and discuss with the patient the **potential risk of** developing side effects including non-fatal **pneumonia** in people treated with ICS. Patients at higher risk of pneumonia include those who currently smoke, are aged ≥55 y, have a previous hx of exacerbations or pneumonia, low BMI, poor MRC grade and/or severe airflow limitation. Also consider their effect on bone health, diabetes and glaucoma risk.
Blood eosinophil counts predict the magnitude of the effect of ICS (added to regular bronchodilator treatment) in preventing future exacerbations.[2] In the current NICE guidelines, the term "higher" eosinophil count has been chosen deliberately, rather than specifying a particular value. Firstly, because it is not yet clear what the precise threshold should be or on how many occasions or over what time period it should be elevated. Secondly the term "higher "reflects the fact that the likely threshold is within the upper normal range of eosinophil count.[4] According to GOLD 2021 the threshold of a blood eosinophil count >300 cells/μL can be used to identify patients with the greatest likelihood of treatment benefit with ICS.[2]
Historically there has been a lot of inappropriate prescribing of triple therapy**. If your patient has infrequent exacerbations, no asthmatic features and blood eosinophil count less than 300 cells/μL – consider a step down to LAMA/LABA.**

ROFLUMILAST: NICE TA461 (July 2017) recommends roflumilast (Daxas) as an add-on bronchodilator therapy for patients with severe (FEV1<50%) disease with exacerbations (≥2in past 12m) despite inhaled triple treatment with LAMA/LABA/ICS. Specialist initiation ONLY (Amber). See guidance Roflumilast (Daxas® ▼) for COPD treatment (AMBER)

Have you got the basics covered? Fundamentals of COPD care:

CORRECT DIAGNOSIS - If there is diagnostic uncertainty at any stage **REFER to secondary care.**

VACCINATION - Offer pneumococcal vaccination as per Green Book (DoH) and an annual flu vaccination. COPD patients belong to the at-risk group prioritised for COVID-19 vaccination (priority group 6 if under 65 years old) see Green Book (DoH).

SMOKING CESSATION - Ensure smoking cessation advice is offered at every opportunity. Explain to patients this is not merely a lifestyle choice, but the most effective available treatment for their condition.

- Unless contraindicated, offer NRT or bupropion as appropriate to people who want to stop smoking, combined with an appropriate support programme. See NICE guidance on smoking interventions and services for evidence-based stop smoking interventions and advice on e-cigarettes. Further resources, including online training is available on the National Centre for Smoking Cessation and Training website. https://www.ncsct.co.uk/ Varenicline (Champix®) is currently unavailable until further notice, more information on the PSNC and MHRA websites.
- **BaNES** St. Martin's Hospital, Clara Cross Lane, Bath BA2 5RP, 0300 2470203 (option 1) for more information or for drop-in session at different locations see https://bathnesshealthandcare.nhs.uk/wellness/stop-smoking-support/
- **SWINDON** stop smoking services – Live Well hub 01793 465513 livewellswindon@nhs.net https://www.swindon.gov.uk/info/20139/live_well_swindon_hub/921/stop_smoking_service
- **WILTSHIRE** http://www.wiltshire.gov.uk/public-health-stop-smoking Health Trainer service also offers tailored support for smokers to quit 0300 003 4566 or email health.trainers@wiltshire.gov.uk

DIET – Ensure dietary advice is offered to people with **abnormal BMI (high or low)**.

- Abnormal (high or low) BMI is a contributing factor to breathlessness (make sure your patients are aware and understand this) and BMI <20 is a predictor of poor outcome.
- Pay attention to weight changes in older patients (especially >3kg)
- Screen for risk of malnutrition using the MUST tool and consider nutritional support if appropriate. See Food First patient leaflet and refer to dietitian if appropriate.
- See leaflets: Eating well for your lungs (low risk of malnutrition), Improving your nutrition in COPD (medium risk of malnutrition) or Nutrition support in COPD (for those at high risk of malnutrition).

EXERCISE - Promote exercise for all COPD patients. A key message for patients is that it is not harmful to make yourself breathless. A person who understands the need to push against the limits of their breathlessness, and believes in their capacity to do so, could be expected to maintain their performance better then someone who is slowly withdrawing from activities.[5] Pedometer based interventions with a step-count are effective.[5,6]
BLF Stay Active and stay well video has an online exercise programme to encourage being active, - https://www.blf.org.uk/support-for-you/keep-active/exercise-video

PULMONARY REHABILITATION – offer to all patients with COPD who are limited by breathlessness (not suitable for people who are unable to walk, have unstable angina or have had a recent MI, or have impaired cognition). It is tailored to individual needs and include physical training, disease education, nutritional, psychological, and behavioural intervention.

- **BaNES- IMPACT team** vcl.bathnesimpact@nhs.net **01225 831 808**
- **Swindon - Community COPD team** gwh.communitycopdoxygenspecialistservices@nhs.net **01793 646436**
- **South Wiltshire – LEEP** What is LEEP? (microguide.global) Contact the Respiratory Department Physiotherapist. **01722 336262** ext **2892.**
- **North, East and West Wiltshire – PACE** referral forms to Wiltshire Health and Care community respiratory team whc.respiratoryreferrals@nhs.net **01249 456607**

BLF information on how to carry out PR if classes have been postponed - How can I carry on doing pulmonary rehabilitation? | British Lung Foundation (blf.org.uk)

SELF MANAGEMENT PLAN AND RESOURCES FOR PATIENTS
A personalised COPD management plan is recommended to enable patients to recognise early symptoms of exacerbation and know the most appropriate action to take. This does not always include the use of rescue medication.

- NHS.uk COPD patient information
- British Lung Foundation – COPD support
- British Lung Foundation – COPD patient passport
- My Lungs My life – I have COPD

BREATHLESSNESS AND CO-MORBIDITIES

MRC (Medical Research Council) dyspnoea scale measures perceived respiratory disability and should be used to grade the breathlessness.

Grade		Degree of breathlessness related to activities
Mild COPD	**1**	Not troubled by breathlessness except on strenuous exercise
	2	Short of breath when hurrying or walking up a steep hill
Moderate COPD	**3**	Walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace
Severe/Very severe COPD	**4**	Stops for breath after walking about 100m or after a few minutes on level ground
	5	Too breathless to leave the house, or breathless when dressing or undressing

Used with the permission of the Medical Research Council (https://mrc.ukri.org/research/facilities-and-resources-for-researchers/mrc-scales/mrc-dyspnoea-scale-mrc-breathlessness-scale/)
Adapted from Fletcher CM. The clinical diagnosis of pulmonary emphysema—an experimental study. Proc R Soc Med 1952;45:577–584.
There is also a modified MRC Scale (mMRC) which is used in the GOLD guidelines and BODE - see Fletcher CM. Standardised questionnaire on respiratory symptoms: a statement prepared and approved by the MRC Committee on the Aetiology of Chronic Bronchitis (MRC breathlessness score). BMJ 1960; 2: 1662.
Please be aware of which scale is used in communication as the severity grading and therefor the patient's future treatment pathway may be affected.

- Remember other common causes of breathlessness and co-morbidities associated with COPD e.g. cardiac, other respiratory conditions (lung cancer), anaemia, kidney disease, anxiety &depression, muscle wasting, osteoporosis as well as the differential diagnosis.
- Screen for **depression and anxiety** and **offer treatment**. Everyone who is breathless will have some degree of anxiety.
  BaNES – TALKING THERAPIES https://iapt-banes.awp.nhs.uk/long-term-health-conditions/
  Swindon – LIFT https://lift-swindon.awp.nhs.uk/physical-health/copd/
  Wiltshire – IAPT https://iapt-wilts.awp.nhs.uk/courses/living-well-with-copd/
- **Fan on the face** (Comfortable position, fan approx. 6 inches or 15cm from face, to aim the draft of air towards the central part of the face, so the draught is felt around the sides of the nose and above the top lip. Benefit should be felt within a few minutes.)

Palliative care

REFERRAL: Patients with COPD often have variable symptom control needs over time and these can be independent of their expected prognosis. For this reason, **referral to Specialist Palliative Care services (SPC), should be considered from diagnosis onwards**. Typically, SPC input will be sporadic and may take the form of intensive review and input for a period of a few weeks and then discharge back to other services follow up. This can occur several times between diagnosis and death although is very patient dependent. Referral can take the form of community CNS involvement, hospital CNS involvement, Consultant involvement for advice/discussion or hospice in-patient stay for symptom control or end of life care. This is in addition to other palliative care services often offered by local hospices, to which patients can self-refer.

BaNES – for urgent advice contact **RUH Palliative care nurse 01225 825567**, more information
Royal United Hospitals Bath | Palliative Care (ruh.nhs.uk)
Bath and West Wiltshire hospice providing services is **Dorothy House Hospice**, 24hr advice line **0345 0130 555 ,**Clinical Coordination Centre**: 0345 0130 555**
Royal United Hospitals Bath | Palliative Care (ruh.nhs.uk)Dorothy House
Swindon and North East Wiltshire - Prospect Hospice single point of contact (SPOC) number is: **01793 816 124**., Contact us - Prospect Hospice (prospect-hospice.net) https://www.prospect-hospice.net/care/referrals/
Salisbury and South Wiltshire – Salisbury Hospice, 24hr advice line **01722 425 113** sft.hospiceadmin@nhs.net

OPIOIDS to relieve breathlessness: Opioids are recognised to improve breathlessness in lung disease and not to impact on prognosis if used safely.[8] Opioids used in COPD should be with the aim of establishing a modified release BD dosing for patients with severe COPD, usually these patients will be felt to be in the last year of life. Start Morphine sulphate 10mg/5ml oral solution 1mg to 2.5mg QDS and PRN up to 4 hourly and refer for palliative care input.

Follow up

- Review lower risk patients (no/few exacerbations in the past year, few symptoms) annually. For patients at higher risk (hospital admission or 2 or more exacerbations in the past year, MRC ≥3), review every 6 months.
- Routine spirometry is no longer part of QOF but still recommended by NICE. Perform annual spirometry where practicable. Recording the opportunistic measurement of spirometric parameters can identify patients with rapidly progressing disease (a loss of 500 ml or more over 5 years will show which people have rapidly progressing disease and may need specialist referral and investigation).
- Revisit the fundamentals of COPD care at each review. Check compliance and inhaler technique.
- Ensure recall date is highlighted to patient and coded on clinical system.

Oxygen Therapy - Referral for Long Term Oxygen Treatment (LTOT)

The need for oxygen therapy should be assessed in:

- Patients with oxygen saturation ≤ 92% breathing air, in a stable state and all patients with severe airflow obstruction (FEV1 < 30% predicted)
- Patients presenting with cyanosis or peripheral oedema or polycythaemia or raised Jugular Venous Pressure

Do NOT offer LTOT to people **who continue to smoke** despite being offered smoking cessation advice and treatment, and referral to specialist stop smoking services. This is because of the fire hazard and consequent risk to themselves and others. To gain maximum clinical benefits from LTOT the patient should not be smoking.

LTOT is indicated following formal blood gas assessment x2 measurements at least 3 weeks apart in patients who:

- Have PaO2 < 7.3kPa when stable or
- A PaO2 between 7.3kPa and 8.0kPa and one of the following: secondary polycythaemia; peripheral oedema or pulmonary hypertension

Patients with Nocturnal desaturation should NOT be offered Nocturnal Oxygen Therapy (NOT) unless they meet the criteria for LTOT or have been seen by the ventilation/sleep services following a respiratory assessment and diagnosed with OSA; Obesity hypoventilation syndrome or overlap syndrome.

LTOT should be ordered for a **minimum of 15hrs a day** and up to 24 hours may be of additional benefit.

SBOT (short burst oxygen therapy) is **no longer recommended** to manage breathlessness. **Do NOT offer ambulatory oxygen** therapy to patients who **do not fulfil LTOT criteria** as the evidence shows that neither of these provide clinically meaningful improvement in breathlessness.

Contacts for oxygen referrals:

BaNES – IMPACT team vcl.bathnesimpact@nhs.net **01225 831 808**

Swindon – Community COPD team gwh.communitycopdoxygenspecialistservices@nhs.net **01793 646436**

South Wiltshire http://www.mg.salisbury.nhs.uk/media/1719/oxygenservicereferral.doc (in SytmONE under Referral Directory A-M → COPD + Respiratory → Home Oxygen Assessment) sft.respiratorynurses@nhs.net

North, East and West Wiltshire – referral form (in SytmONE under Referral Directory A-M → COPD + Respiratory → Respiratory & Oxygen Team) to Wiltshire Health and Care community respiratory team whc.respiratoryreferrals@nhs.net **01249 456607**

Acute exacerbation – a sustained worsening of symptoms from a person's stable state.

- Increase frequency of short acting bronchodilator MDI e.g. Salbutamol via a spacer
- SABAs can be as effectively delivered via an inhaler and spacer as by a nebuliser. Given this, patients rarely require nebuliser equipment at home. Discourage patients from buying their own nebuliser. If needed, please refer to COPD community team/secondary care for assessment.
- Offer oral prednisolone 30mg daily for 5 days ONLY.
- Sputum Chart - consider sputum colour changes and changes in volume or thickness beyond the person's normal day-to-day variation.
- **PURULENT SPUTUM PRODUCTION** - if antibiotics are being considered in an acute exacerbation, please refer to NICE COPD (acute exacerbation): antimicrobial prescribing guideline (NG114) and to the primary care antibiotic guidance - BSW Management of Infection Guidance for Primary Care
- **Do NOT put rescue packs of antibiotics and/or prednisolone on a repeat template**. Please issue as acute prescription. Have a plan in place for patient to notify respiratory nurse when started course (or as soon as practicable), so patient can be **followed up at each exacerbation** and rescue pack can be reissued. Please read code exacerbation in notes.

Antibiotic Prophylaxis

- Prophylactic antibiotics should not be prescribed unless advised by a respiratory consultant. Such patients and their antibiotic use should be reviewed regularly.
- **Azithromycin** used three times a week for its anti-inflammatory and immune-modulating effects to help reduce the frequency of COPD exacerbations (off label use) should only be initiated in secondary care for a limited number of eligible patients (see NG115 for eligibility criteria). Review three months after initiation and then every six months.
    - If used long term for COPD then usually suggesting using over the winter months (October to April) only, at 250mg three times a week.
    - Can be pro-arrythmogenic. Avoid in anyone who's ECG shows a QT interval >450ms (men) or >470ms (women).
    - Can cause ototoxicity. Stop if any suggestion of hearing loss.
    - Can cause LFT disturbance. Needs LFTs rechecking every 6 months whilst on azithromycin.
    - Azithromycin should be continued during exacerbations, even if put onto another antibiotic.

Patients with excessive, viscous mucous

- Consider referral to community COPD service for respiratory physiotherapy (where they can be taught active cycle of breathing techniques and how to use positive expiratory pressure devices as appropriate).
  BaNES - – IMPACT team vcl.bathnesimpact@nhs.net **01225 831 808**
  Swindon-referral to gwh.communitycopdoxygenspecialistservices@nhs.net **01793 646436**
  South Wiltshire –Respiratory Physio, Chest clearance clinic at Salisbury Hospital
  North, East and West Wiltshire - Wilts Health and Care comm. respiratory team
  whc.respiratoryreferrals@nhs.net **01249 456607**
- For symptom control, trial Carbocisteine 750mg (2 x 375mg caps) TDS for 4 weeks**. If there is no benefit after 4 weeks, stop.** If condition improves, continue a reduced dose of 750mg BD. Review 3 months after initiation and regularly

When to refer to secondary care for expert opinion-Referral may be appropriate at all stages of the disease and not solely in the most severely disabled people.

There is diagnostic uncertainty	Haemoptysis
Low smoking history (i.e. <20 pack years)	A rapid decline in symptoms and/or FEV1
The person with COPD requests a second opinion	Suspected severe COPD
Symptoms disproportionate to lung function deficit	Onset of cor pulmonale
Onset of symptoms under 40 years or a family history of alpha 1 antitrypsin deficiency	Frequent infections or increase of frequency of infections e.g. greater than 3 per year
Assessment for a lung volume reduction procedure	Dysfunctional breathing
Assessment for lung transplantation	Assessment for oxygen therapy
Bullous lung disease	For palliative care

References and further information on COPD

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