Primary Care Respiratory Update

Autumn/Winter 2023 Issue 27

Your members' magazine packed with useful features, clinical updates, educational updates, respiratory news and opinion.

Special edition - Focus on COPD

PCRS position on spirometry

PCRS consensus on the treatment of COPD: Keeping it simple

Triple therapy in COPD

Surgical options for COPD

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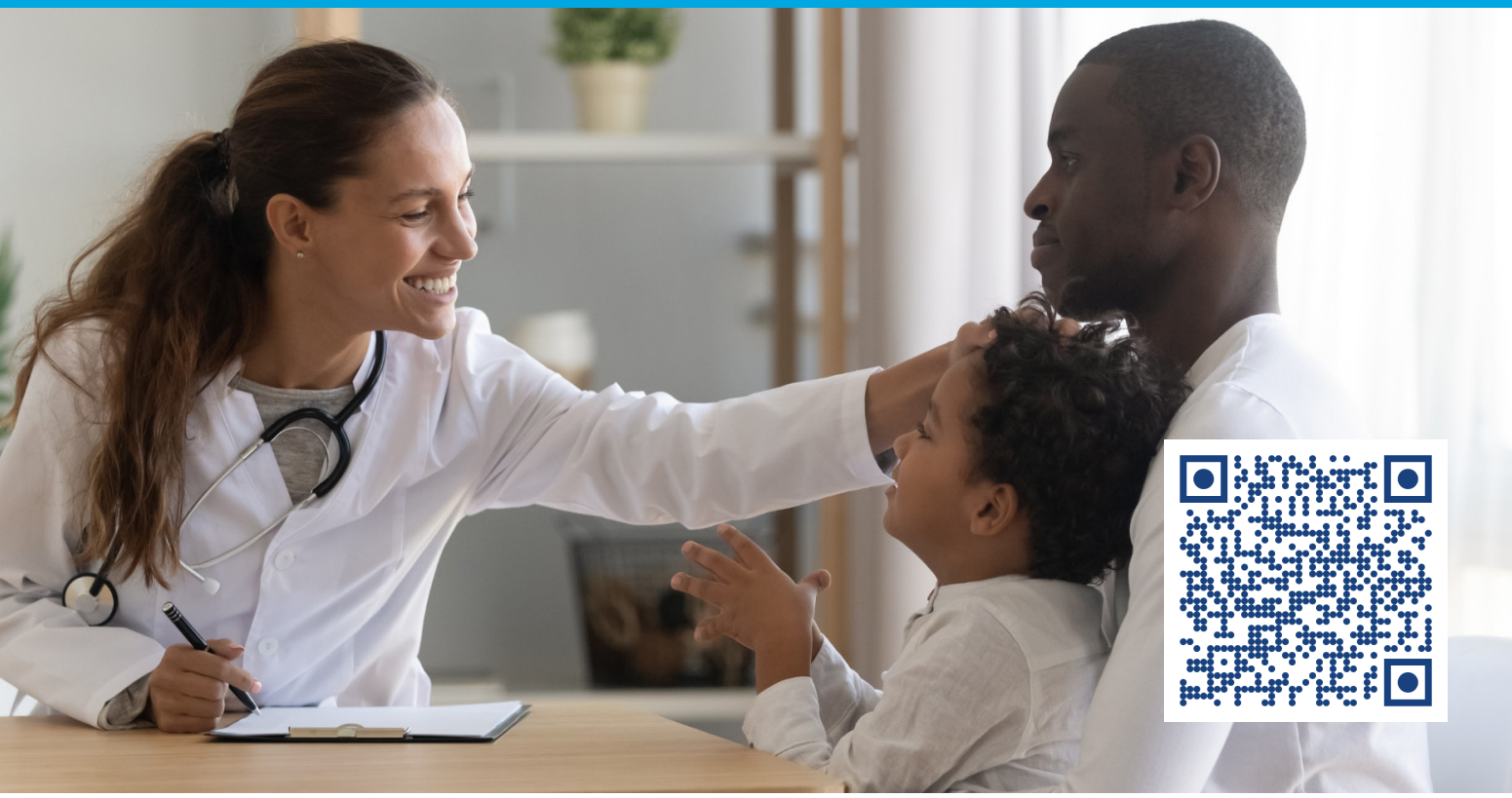

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References: 1. Tiogiva Summary of Product Characteristics. **2.** BNF. July 2022. (See NHS indicative price). **3.** Data on file TIO/2022/06/003. June 2022. **4.** MHRA Public Assessment Report PL25258/0370. **5.** Braltus® Summary of Product Characteristics. **6.** Tiogiva Patient Information Leaflet. **7.** Spiriva® Patient Information Leaflet. Available at https://www.medicines.org.uk/emc/product/1693/pil. **8.** Braltus® Patient Information Leaflet. Available at https://www.medicines.org.uk/emc/product/4446/pil. **9.** Acopair® Patient Information Leaflet. Available at https://www.medicines.org.uk/emc/product/12673/pil. **10.** Data on file TIO/2022/02/001. February 2022.

PIP codes: Tiogiva dry powder inhaler and capsules 18 mcg (30) – 4178752, Tiogiva inhalation powder, hard capsules 18 mcg (30) – 4178729, Tiogiva inhalation powder, hard capsules 18 mcg (60) – 4178711.

Date of preparation: September 2022 PP-UK-TIO-0156 V1

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Primary Care Respiratory Update

Contents

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Acetylcysteine

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Date of preparation: 23 December 2022

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0040030013 v 2.0 | Date of preparation: October 2023

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1. Acepiro Summary of Product Characteristics. Available at https://www.medicines.org.uk/emc/product/13849/. Date accessed March 2023
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Guest Editors Update - Focus on COPD

Katherine Hickman, *PCRS Executive Chair*

In September we celebrated our largest number of delegates ever, to attend a PCRS conference. It continues to amaze me how year-on-year the Conference Organising Committee continues to deliver such an outstanding event. It was, though, with a heavy heart that we said goodbye this year to one of our dearest members of PCRS, Dr Iain Small. Iain embedded everything that PCRS stands for and his dedication, knowledge, enthusiasm, humour, and friendship were second to none. Please take the time to read Steve Holmes's wonderful tribute to him. You will be forever missed Iain but your dedication will continue to live on through our work to improve the care of patients with respiratory disease.

Despite being a clinician with a special interest in Respiratory, COPD patients make up only a small fraction of my daily caseload. Many primary care clinicians, unfamiliar with the latest respiratory guidelines, may find delivering evidence-based care overwhelming due to the multitude of international, national, and local guidelines. It has always been our mission at PCRS to try and cut through the overwhelm, support clinicians working in primary care to provide the best care for respiratory patients, and make the complex simple.

In this edition, we revisit the 2017 PCRS consensus on COPD treatment titled 'Keeping it Simple.' The updated algorithm aligns with the latest GOLD and NICE guidance, and maintains a focus on patient-centred treatment grounded in evidence, medication optimisation, and continuous monitoring. The article highlights the ongoing evolution in COPD management while prioritising patient well-being within the ever-changing healthcare landscape.

For those already acquainted with the latest guidelines, I hope this article serves as a valuable reaffirmation. I also hope, though, that you share this article with colleagues and those who may be redesigning treatment pathways and guidelines locally. I hope, as a PCRS member, that you see it as part of your responsibility to share your skills, knowledge, and expertise to support others locally.

While only about 1% of COPD patients may be suitable for bronchoscopic or surgical interventions, the potential benefits are substantial. How often are we considering it and how many patients are currently missing out on life-changing surgery because of a lack of awareness? I suspect the numbers are substantial and I am almost certainly guilty. The PCRS Pragmatic Guide on bronchoscopic and surgical options for COPD emphasises the role of primary care in identifying suitable candidates for interventions that can significantly improve lung function, exercise capacity, and quality of life. The guide underscores the importance of integrated care, collaboration between primary care and specialists, and adherence to referral criteria outlined by NICE.

As primary care practitioners, we are encouraged to think about referral for surgery in cases of severe emphysema, especially when patients experience worsening breathlessness. The guide provides criteria for identifying patients who might benefit from interventions, such as lung volume reduction surgery (LVRS) and endobronchial valve (EBV) insertion, and emphasises the need for collaboration with specialist colleagues.

For many, the pandemic feels like a distant memory and that COVID-19 remains a thing of the past. For others, though, we are conscious that it is still with us and certain patients in

particular remain at risk of severe disease if it is not picked up quickly and they do not receive potentially life-saving treatment.

This issue's article on COVID-19 classifies individuals at a heightened risk of progressing to severe illness during the upcoming winter, presenting criteria for adults and children with different health conditions. It provides a thorough guide for addressing COVID-19 in primary and community care settings, covering assessment, management, and treatment options. The piece introduces various therapies, including antivirals and nMABs, available in these settings, emphasising eligibility criteria and safety considerations. Furthermore, it outlines treatment options for confirmed COVID-19, differentiating between mild cases and those at an elevated risk of progression.

As we navigate the evolving landscape of respiratory care, I hope this edition inspires confidence in managing COPD, addressing COVID-19 concerns, and ultimately reflecting on the loss of Dr Iain Small who really was one in a million. I hope you are able to take some time off over the Christmas break, recharge, and come back in the New Year invigorated and impassioned to continue our mission of supporting those with respiratory disease.

Spirometry in primary care following the COVID-19 Pandemic

Spirometry is a component of the diagnosis and management of respiratory conditions in primary care and should ideally be performed via referral to a primary care network respiratory diagnostic service or community diagnostics centre (CDC) with expertise in the diagnosis of the most common respiratory conditions and of less common diagnoses. Where limited resources create a challenge for testing everyone with a new suspected diagnosis of asthma, those with an intermediate probability should be prioritised for spirometry and also FENO where available. Spirometry confirmation of COPD is mandatory before any definitive communication with a patient that they have this diagnosis. Spirometry should be delivered and technically reported by registered healthcare professionals with an appropriate level of expertise and experience.

Background

Spirometry is a test used to measure lung volumes and air flow. Spirometry is a component of the diagnosis and management of respiratory conditions in primary care including asthma and chronic obstructive pulmonary disease (COPD). Spirometry can be used for monitoring conditions such as restrictive respiratory conditions, though this is not usually a primary care role.[1,2] Correctly performed and technically reported spirometry is essential to confirm suspected COPD.[3] The clinician exploring the cause of chronic and recurrent respiratory symptoms such as breathlessness, cough, 'chest infection' and wheeze should have ready access to spirometry to assist in the confirmation or exclusion of a suspected diagnosis.[4] Symptoms of COPD can overlap with many other conditions that have a normal or different abnormal spirometry finding. A suspected asthma diagnosis may require spirometry confirmation, especially if the clinical picture does not reach a high probability grade,[5] and is certainly required for practices looking to achieve the quality improvement targets of the Quality and Outcomes framework (QOF). There is a risk to diagnosing common respiratory symptoms without using spirometry in that inappropriate and potentially harmful interventions can be initiated with the potential to then delay the right treatment for the correctly diagnosed cause.

History of spirometry in primary care

The widespread use of spirometry in primary care started in all four nations of the UK with the introduction of the Quality and Outcomes Framework (QOF) in 2004.[6] For the first time, payment to general practice surgeries was made if amongst other criteria there was spirometry confirmation of a suspected COPD diagnosis.

Over time, the availability, skills and knowledge within primary care to provide, perform and technically report spirometry increased. In 2016, the new NICE guideline on diagnosis and management of asthma[1], recommended, albeit controversially,[7] that spirometry should become a routine confirmatory test in the diagnosis of asthma. This guidance subsequently entered the QOF quality criteria (though Scotland no longer participated in QOF by this time and Wales had developed its own GP quality improvement system) for anyone receiving a new diagnosis of asthma from and beyond 2021;[8] " A record of spirometry and one other objective test (FeNO or reversibility or variability) between 3 months before and 6 months after diagnosis".

However, by this time it was becoming apparent that for COPD diagnosis, whilst the QOF data suggested a high usage of spirometry to confirm diagnosis, deeper analysis showed that evidence of spirometry performed and spirometry consistent with a COPD diagnosis were both much lower than QOF records suggested.[9,10] There was a realisation that a major quality improvement exercise would be required to ensure that people in primary care were universally trained to do spirometry correctly and safely and provide accurate technical reporting. This resulted in the development of the Association for Respiratory Technology and Physiology (ARTP) national certificate and register for competence in performing and technically reporting spirometry, that in England was subsequently adopted as a good practice standard by the Care Quality Commission (CQC).[11] The recognition of the burden of providing high quality spirometry for a primary care system that was increasingly under pressure and with the expectation of its more routine use in asthma diagnosis by NICE also meant that some practices were unable to fully deliver on the requirements and new models of delivering spirometry at population level started to be explored.[12]

Safe spirometry and how COVID-19 has influenced service delivery

Safe spirometry has always required systems to manage the cross-infection risk caused by the droplets and aerosols

produced by coughing during the test and because of the use of equipment between users. Spirometry in itself is not an aerosol generating procedure but coughing during the manoeuvres is. Often the spirometry equipment and attached computer was insufficiently portable that the manoeuvres were carried out in a dedicated clinical room with patients being tested one after another in sequence. In primary care, clinical rooms can be very small and have limited ventilation.

The COVID-19 pandemic brought to the fore the risks of cross-infection for staff and patients co-existing in the spirometry test space. It became clear that much of the primary care buildings infrastructure was unsuited to spirometry testing and that the mitigations that needed to be put in place such as airing of the room between patients was often impractical because of limited clinical space and time.

During COVID-19, confirmation of diagnosis of COPD and asthma with objective tests including spirometry, microspirometry (not diagnostic quality), peak expiratory flow (PEF) and fractional exhaled nitric oxide (FENO) were greatly reduced or stopped altogether.

An audit by the Royal College of Physicians in Welsh primary care that started in 2013 and last reported in 2021 has shown that the use of spirometry for the diagnosis of COPD and asthma has been decimated since the pandemic.[10,13] This appears to be due to a combination of factors including retirement of skilled people without replacement, and because becoming trained, assessed and certified and engaging in self audit and update is considered too much of a barrier to overcome by many.

It is well established that COVID-19 exacerbated the effects of the health inequalities that exist in the UK.[14] It now appears that spirometry and FENO is also less available to those who need it most. Primary care services experience more pressure when they work with communities that have more health inequality. A recent report has shown that this has translated into less respiratory diagnostic availability for those more at risk, often due to higher tobacco use, poor indoor and outdoor air quality and poor housing.[15]

PCRS has recognised for some time that the delivery of spirometry to everyone who needs it has been unequal with variable training and access and has advocated a population-based approach with delivery of excellence through networks rather than relying on individual practices.[12] PCRS recognises that spirometry will still need to be carried out at practice level especially for rural and isolated communities either as part of a network approach or standalone but the standards of training and audit should be of an equivalent standard.

Where available, spirometry should be performed via referral to a primary care network respiratory diagnostic service or community diagnostics service (CDC) with expertise in the diagnosis of the most common respiratory conditions, asthma and COPD, and of less common respiratory disease and non-respiratory causes of respiratory-related symptoms. This approach has the potential to avoid the need for referral to hospital-based secondary care services and to ensure maximum safety for patients and healthcare professionals undertaking testing procedures such as spirometry.

Spirometry for people with suspected asthma

For children, young people and adults with suspected asthma, spirometry would, ideally form part of the structured diagnostic clinical assessment alongside a detailed history, examination and review of the patient's clinical records. It is important to note that even in a patient with a high probability for asthma based on clinical presentation, the spirometry may be normal if they are tested at a time when airways inflammation has subsided or if they have been treated with inhaled or oral corticosteroids whilst awaiting spirometry testing. Spirometry findings demonstrating airways obstruction and reversal can help support a diagnosis of asthma but a normal test cannot rule out a diagnosis and further spirometry testing or the use of peak flow diary monitoring and FENO would need to be used to provide additional objective data to provide more confidence in a diagnosis.

PCRS calls for sufficient funding of spirometry services so that anyone with respiratory symptoms suggestive of asthma should be able to access timely spirometry, if considered necessary. However, where resource limitations exist, diagnostic spirometry should be reserved for those patients with an intermediate probability of asthma.[16]

Patients with a high probability of asthma following a structured clinical assessment can be appropriately managed with a trial of treatment and with peak flow diary monitoring in the home environment.

Spirometry for people with COPD

The diagnosis of COPD relies heavily on history but can only be formally diagnosed if fixed airflow obstruction without significant reversibility is demonstrated.

During the COVID-19 pandemic PCRS recommended that a tentative diagnosis of COPD could be made using PEFR measures with spirometry confirmation at a later date. This recommendation was based on a finding of a PEFR <75% predicted, as this suggests airflow obstruction, followed by serial measurements over 2 weeks confirming absence of variability and an insignificant response to salbutamol.

PCRS no longer recommends this approach. Spirometry confirmation of COPD is mandatory before any definitive communication with a patient that they have a COPD diagnosis. Microspirometry should not be used to confirm diagnosis as it is not designed for this function.

Knowledge and skills required to perform spirometry

Spirometry should be delivered and technically reported by healthcare professionals with an appropriate level of expertise and experience and who are assessed and certified as competent. Some spirometry teaching courses offer training to an ARTP standard but do not provide an assessment and certification after training. PCRS recommends that assessment of learning and regular updates is an essential component of spirometry training. The National Register of Certified Spirometry Professionals and Operators[17] is the list of practitioners and operators who have demonstrated their competence in spirometry. To perform spirometry, healthcare professionals should attain the Foundation level of competency. To perform and technically report spirometry, full competency must be attained. An additional level of competency allows for healthcare professionals to technically report but not perform spirometry. PCRS would also recommend that spirometry service providers should perform regular audit and regularly reflect with specialist colleagues on their reports as part of ongoing professional learning and development.

Following technical reporting, a diagnosis will be considered and communicated and this should be performed by a health professional trained for this task. PCRS has developed a guidance document for commissioners and health professionals, Fit to care: key knowledge skills and training for clinicians providing respiratory care, that can help a diagnostic service that includes spirometry reflect on whether it is fit for purpose.[18] Asthma + Lung UK has also developed recommendations to help health professionals deliver a better diagnostic experience for people suspected to have a lung condition.[13]

Both before and after a spirometry test, people will need information to decide whether to do the test, be prepared for the experience of the test and to understand what the test results might show and how they may be interpreted by their diagnosing health professional. Asthma + Lung UK provide excellent resources that can help.[19]

PCRS position

- Spirometry is a component of the diagnosis and management of respiratory conditions in primary care including asthma and COPD.
- Where spirometry is indicated this should ideally be performed via referral to a primary care network respiratory diagnostic service or community diagnostics centre with expertise in the diagnosis of the most common respiratory conditions, asthma and COPD, and of less common respiratory disease and non-respiratory causes of respiratory-related symptoms.
- Where limited resources create a challenge for testing everyone with a new suspected diagnosis of asthma, people with suspected asthma with an intermediate probability should be prioritised for spirometry and also FENO where available.
- PCRS no longer recommends making a tentative diagnosis of COPD using PEFR diary monitoring. Spirometry confirmation of COPD is mandatory before any definitive communication with a patient that they have a COPD diagnosis. Microspirometry should not be used to confirm diagnosis as it is not designed for this function.
- Spirometry should be delivered and technically reported by registered healthcare professionals with an appropriate level of expertise and experience.

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Luforbec 200/6 pMDI: Each dose contains beclometasone dipropionate (BDP) 200 mcg and formoterol fumarate dihydrate 6 mcg. **Indications:** ***Asthma:*** Regular treatment of asthma where use of an inhaled corticosteroid/long-acting $beta_2$-agonist (ICS/LABA) combination is appropriate: patients not adequately controlled on ICS and as needed short-acting $beta_2$-agonist, or patients already adequately controlled on both ICS and LABA. ***COPD*** **(Luforbec 100/6 only):** Symptomatic treatment of patients with severe COPD (FEV_1 <50% predicted normal) and a history of repeated exacerbations, who have significant symptoms despite regular therapy with long-acting bronchodilators. **Dosage and administration:** For inhalation in adult patients (≥18 years); not recommended for children and adolescents under 18 years. ***Asthma:*** **Maintenance therapy:** Luforbec 100/6 pMDI: 1–2 inhalations twice daily. Luforbec 200/6 pMDI: 2 inhalations twice daily. The maximum daily dose is 4 inhalations, ensuring a separate short-acting bronchodilator is available as needed. Patients should receive the lowest dose that effectively controls symptoms. **Maintenance and reliever therapy (Luforbec 100/6 pMDI only):** Luforbec can be taken as a regular maintenance treatment and as needed in response to asthma symptoms: 1 inhalation twice daily (morning and evening) plus 1 additional inhalation as needed in response to symptoms. If symptoms persist after a few minutes, an additional inhalation is recommended. The maximum daily dose is 8 inhalations. Patients should be advised to always have Luforbec available for rescue use. Close monitoring for dose-related adverse effects is needed in patients who frequently take high numbers of Luforbec as-needed inhalations. ***COPD*** **(Luforbec 100/6 pMDI only):** 2 inhalations twice daily. Luforbec pMDI can be used with the AeroChamber Plus® spacer device. 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Patients should be advised to take Luforbec every day even when asymptomatic. Treatment should be discontinued immediately if the patient experiences a paradoxical bronchospasm. Use with caution (which may include monitoring) in patients with cardiac arrhythmias, especially third degree atrioventricular block and tachyarrhythmias, aortic stenosis, hypertrophic obstructive cardiomyopathy, severe heart disease, particularly acute myocardial infarction, ischaemic heart disease, congestive heart failure, occlusive vascular diseases, arterial hypertension, aneurysm, thyrotoxicosis, diabetes mellitus, phaeochromocytoma and untreated hypokalaemia. Caution should be used when treating patients with known or suspected prolongation of the QTc interval (QTc > 0.44 seconds). Formoterol itself may induce QTc prolongation. Potentially serious hypokalaemia may result from $beta_2$-agonist therapy and may also be potentiated by concomitant treatments (e.g. xanthine derivatives, steroids and diuretics). Particular caution is advised in severe asthma as this effect may be potentiated by hypoxia. Formoterol may cause a rise in blood glucose levels. Luforbec should not be administered for at least 12 hours before the start of anaesthesia if halogenated anaesthetics are planned due to risk of arrhythmias. Use with caution in patients with pulmonary tuberculosis or fungal/viral airway infections. An increase in pneumonia and pneumonia hospitalisation in COPD patients receiving ICS has been observed. Clinical features of pneumonia may overlap with symptoms of COPD exacerbations. Systemic effects of ICS may occur, particularly at high doses for long periods e.g. Cushing's syndrome, Cushingoid features, adrenal suppression, decrease in bone mineral density, cataract and glaucoma and more rarely, psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression and aggression. Consider referral of patients reporting blurred vision or visual disturbances to an ophthalmologist as causes may include cataract, glaucoma or rare diseases such as central serous chorioretinopathy. Prolonged treatment with high doses of ICS may result in adrenal suppression and acute adrenal crisis. **Interactions:** Possibility of systemic effects with concomitant use of strong CYP3A inhibitors (e.g. ritonavir, cobicistat) cannot be excluded hence caution and appropriate monitoring is advised. Beta-blockers should be avoided in asthma patients. Concomitant administration of other beta-adrenergic drugs and theophylline may have potentially additive effects, therefore exercise caution. Concomitant treatment with quinidine, disopyramide, procainamide, phenothiazines, antihistamines, monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants can prolong the QTc interval and increase the risk of ventricular arrhythmias. L-dopa, L-thyroxine, oxytocin and alcohol can impair cardiac tolerance towards $beta_2$-sympathomimetics. Concomitant treatment with MAOIs including agents with similar properties (e.g. furazolidone, procarbazine) may precipitate hypertensive reactions. Concomitant treatment with xanthine derivatives, steroids, or diuretics may potentiate a possible hypokalaemic effect of $beta_2$-agonists. Hypokalaemia may increase the likelihood of arrhythmias in patients receiving digitalis glycosides. There is a small amount of ethanol in Luforbec pMDI hence a theoretical potential for interaction in particularly sensitive patients taking disulfiram or metronidazole. **Pregnancy and lactation:** Use only during pregnancy or lactation if the expected benefits outweigh the potential risks. 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Ref: 1. NHS BSA. Drug Tariff. https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff Accessed: October 2023. **2.** Certifications of carbon neutrality for Luforbec 100/6 and 200/6 pMDI. **3.** Carbon Footprint Limited, Luforbec Life Cycle Assessment Report 2022. Data on File. **4.** MIMS: Inhaler Carbon Emissions. https://www.mims.co.uk/inhaler-carbon-emissions/respiratory-system/article/1739635. Accessed: October 2023. **5.** Luforbec 100/6 pMDI. Summary of Product Characteristics (SPC). Lupin Healthcare UK Limited. **6.** Luforbec 200/6 pMDI. Summary of Product Characteristics (SPC). Lupin Healthcare UK Limited. Fostair® is a registered trademark of Chiesi Ltd

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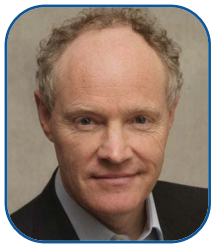
Keeping it Simple: A PCRS consensus on the treatment of COPD in the UK



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In this article the authors review current evidence and guidance for the treatment of Chronic obstructive pulmonary disease (COPD) in order to bring up to date the Primary Care Respiratory Society (PCRS) consensus approach and algorithm first published in 2017 known as 'Keeping it Simple'.

Background

COPD is the second most common lung disease in the United Kingdom.[1] An estimated 2.2% of the adult population are living with a diagnosis of COPD in 2022, equating to more than 1.2 million people.[1] While the prevalence of COPD in the UK is comparable to that of other European countries, we have the 3rd highest mortality rate from the disease.[2] These figures are a stark reminder that we still have some way to go to improve the lives and outcomes of people diagnosed with COPD in the UK.

Over the past decade, the UK has been playing catch up in terms of clinical guidelines for the diagnosis and management of COPD. In an attempt to address this, from a primary care perspective, in 2017 PCRS published a treatment algorithm for COPD in the UK focusing on pharmacotherapy.

'Keeping it Simple' was originally developed as a response to requests from local medicines optimisation teams and prescribers in primary care who wanted more clarity about the most appropriate pharmacotherapy for COPD. The National Institute for Health and Care Excellence (NICE) guideline in use at that time had been published in 2010 using at the latest, 2009 evidence and classifying treatment options based on airflow limitation cut-offs. Whereas, the Global Initiative for Chronic Obstructive Lung Disease (GOLD) had been updating its approach every 18-24 months and at the time was sharing a new approach of differentiating treatment based broadly on whether people with COPD experienced predominantly exacerbations or breathlessness.

The 'Keeping it Simple' approach that was developed, like GOLD, recognised that the evidence supported predominant breathlessness or exacerbations treatment pathways, but PCRS in addition added a third pathway for people with both asthma and COPD.

NICE published a new COPD guide in 2018 with an update in July 2019.[3] This update attended to two significant omissions in the 2018 refresh with regard to the role of triple inhaled therapies and the duration of oral corticosteroid (OCS) treatment. This guideline notably now aligned with the PCRS 'Keeping it Simple' third treatment pathway for people with 'COPD with asthma', with its focus on the presence of asthmatic features as a main 'treatable trait'.

GOLD published for 2023[4] a new pharmacological approach and taxonomy that represented such a material change that it has now prompted PCRS to review 'Keeping it Simple' to ensure that it reflects the current evidence and the practicalities of prescribing within a UK health economy. The GOLD report incorporates the results of recent longitudinal studies and Phase 3 drug trials. These studies are changing how

we view COPD at the most fundamental level and consequently how we approach the treatment of patients.

2023 GOLD guidelines

Assessment and classification of COPD

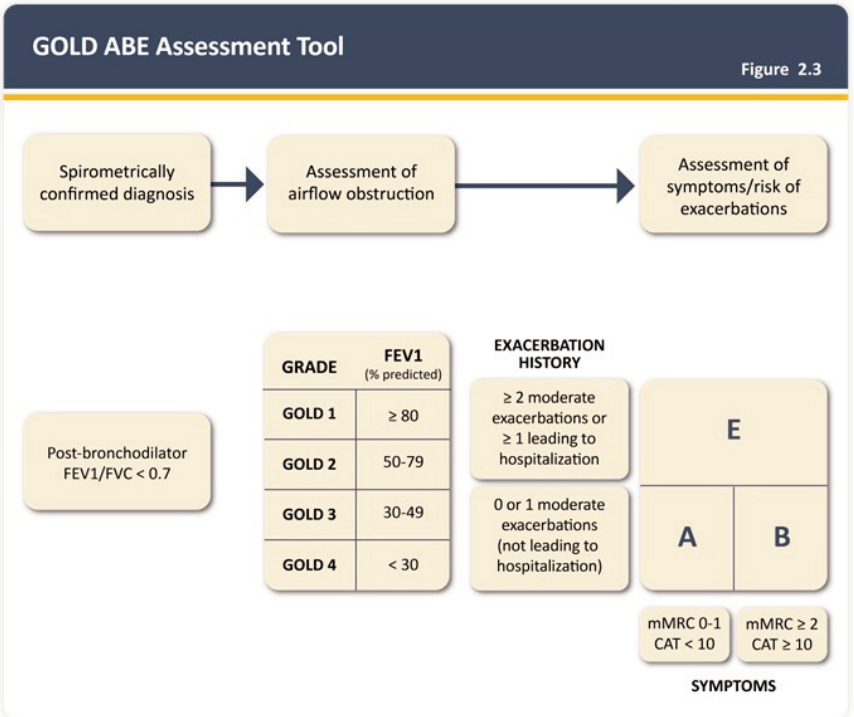
The latest GOLD guideline includes a major change in the way COPD is assessed and classified. The GOLD Refined Assessment Tool, first introduced in 2017, included spirometric assessment of airflow obstruction and grouping of patients based on symptoms (primarily breathlessness) and recent history of exacerbations (as an indicator of future exacerbation risk). The original model stratified patients into four groups (A, B, C and D) based on high or low exacerbation risk and high or low symptoms. Initial pharmacological treatment was determined on the basis of these groupings. The recommendation for patients with a low exacerbation risk was a bronchodilator for those with a low symptom burden (Group A) and a long-acting bronchodilator (LABA or long-acting muscarinic agent [LAMA]) for those with a high symptom burden (Group B). For patients with a high exacerbation risk, a LAMA was recommended for those with a low symptom burden (Group C) with combination therapy (LAMA + LABA or LABA + inhaled corticosteroid [ICS]) for those with a high symptom burden (Group D).

While the assessment of severity based on spirometric evaluation remains, the grouping of patients by symptom burden and future exacerbation risk has changed in the 2023 update (Figure 1) along with the recommended initial pharmacotherapy for each group (Figure 2).

Management of patients with a low risk of future exacerbations. While treatment for patients with a low exacerbation risk and low symptom burden (Group A) remains the same, a monotherapy approach has been abandoned for patients with a low exacerbation risk and high symptom burden (Group B). For these patients, the initial treatment should be LABA + LAMA combination therapy, preferably in a single inhaler. These recommendations are based on the results of Phase 3 clinical trials of several LABA/LAMA combinations which consistently demonstrated improved lung function and health-related quality of life compared with either agent alone and also when compared with a LABA + ICS regimen.[5] Indeed, the 2023 report is very clear that there is no longer a role for the LABA + ICS combination for the initial treatment of patients with COPD at low risk for exacerbations.

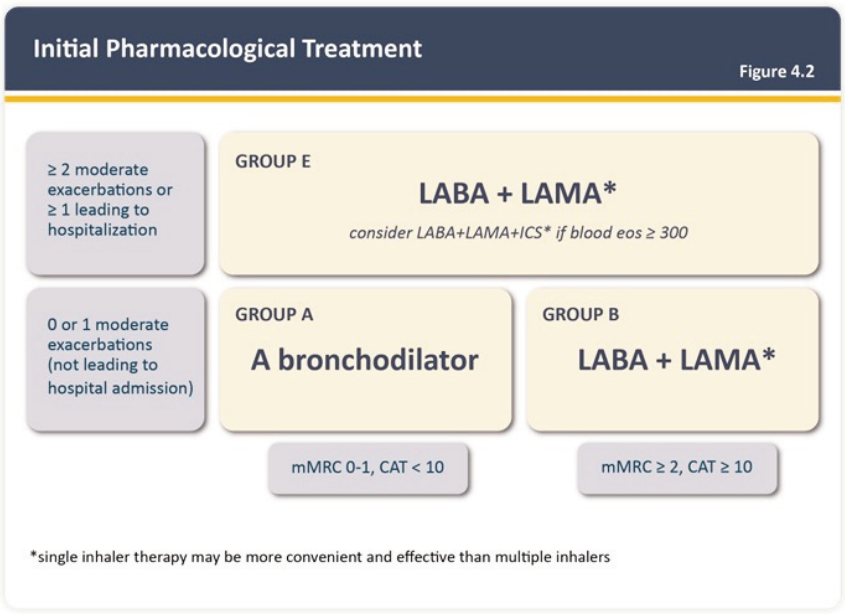
Management of patients with a high risk of future exacerbations. Management of patients with a high risk of future exacerbations. Perhaps the most significant change is that patients at high risk for exacerbations are no longer stratified by symptom burden. Instead, these patients are grouped together as Group E, with initial treatment being a LABA + LAMA combination (Figure 2). For these patients, a more rational approach to ICS use is recommended, guided by clinical factors and blood eosinophil levels. Patients that are unlikely to benefit from an ICS are those with a blood eosinophil count <100 cells/µL. ICS therapy can be considered for patients with a blood eosinophil count between 100 and <300 cells/µL who have had one moderate COPD exacerbation in the previous year. Patients most likely to benefit from ICS therapy are those with a blood eosinophil count >300 cells/µL, a history of hospitalization for COPD exacerbations, ≥2 moderate exacerbations a year or with a history of, or concomitant asthma. When considering starting an ICS, blood eosinophils are not the only useful factor. There are known harms of ICS use, including an increased risk of pneumonia and of mycobacterial infection. Patients with a history of recurrent pneumonia and

Figure 1. The GOLD ABE Assessment Tool[4]



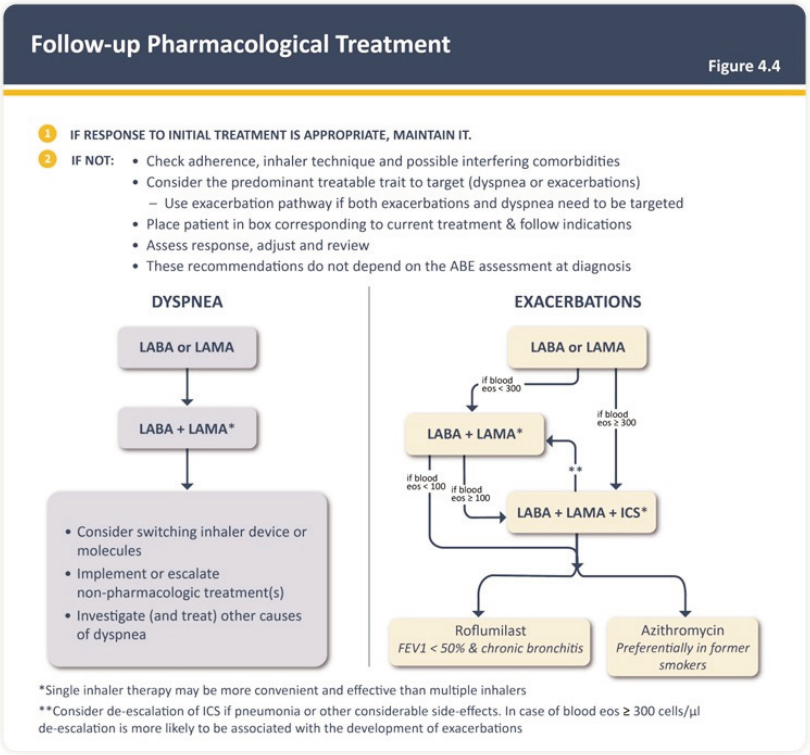
CAT, COPD Assessment Test; MRC, Medical Research Council; FEV1, forced expiratory volume over 1 second; FVC, forced vital capacity.

Figure 2. Initial pharmacological treatment of COPD[4]



CAT, COPD Assessment Test; ICS, inhaled corticosteroid; LABA, long-acting bronchodilator; LAMA, long-acting muscarinic agent; MRC, Medical Research Council.

Figure 3. GOLD follow-up pharmacological treatment[4]



CAT, COPD Assessment Test; eos, eosinophils; FEV_1, forced expiratory volume over 1 second; ICS, inhaled corticosteroid; LABA, long-acting bronchodilator; LAMA, long-acting muscarinic agent; MRC, Medical Research Council.

those with a previous mycobacterial infection should not routinely be started on ICS as the harms may well outweigh the benefits. These fundamental changes to the classification and initial treatment of patients with a high risk of future exacerbations reflect the findings of the ECLIPSE study. This study showed that eosinophil count, an indicator of underlying inflammation, was a better predictor of response to ICS therapy than was a high symptom burden.[6]

Management of patients with ongoing symptoms or exacerbations. The rational approach to the use of ICS therapy based on evidence of an underlying inflammatory process, greatly simplifies both the approach to initial treatment and the follow-up treatment decisions (Figure 3). The first step for any patients with ongoing symptoms or repeated exacerbations is to review and optimise their current treatment regimen – check inhaler technique, consider whether any comorbid conditions are present or require review. Next steps depend on whether the patients have ongoing breathlessness or repeated exacerbations, regardless of their initial grouping.

Patients with ongoing breathlessness who were receiving bronchodilator monotherapy can be escalated to combination LABA + LAMA therapy. For those already on combination therapy, switching to an alternative device or molecule can be considered alongside a focus on treatment optimisation, non-pharmacological management, and investigation of alternative causes of breathlessness.

Patients with ongoing exacerbations can be escalated to triple therapy including an ICS if elevated eosinophils to >300 cells/µL, or to roflumilast (for those with an FEV_1 <50% and chronic bronchitis) or azithromycin (preferentially in former smokers). However, the

reliance on elevated blood eosinophils as the single biomarker for ICS initiation in exacerbating patients has its critics, not least because the question remains as to when to assess for eosinophils as a patient with a recent exacerbation who has received oral steroids (prescribed or via their emergency pack) may not meet the 300 cells/µL cut-off.

2019 NICE guidelines

So where are we with NICE guidance? Initial therapy for all patients with COPD remains single bronchodilator therapy with a short-acting bronchodilator (SABA) or short-acting muscarinic antagonist (SAMA) (Figure 4). Patients limited by symptoms or exacerbations can then be treated more aggressively if asthmatic features are present.

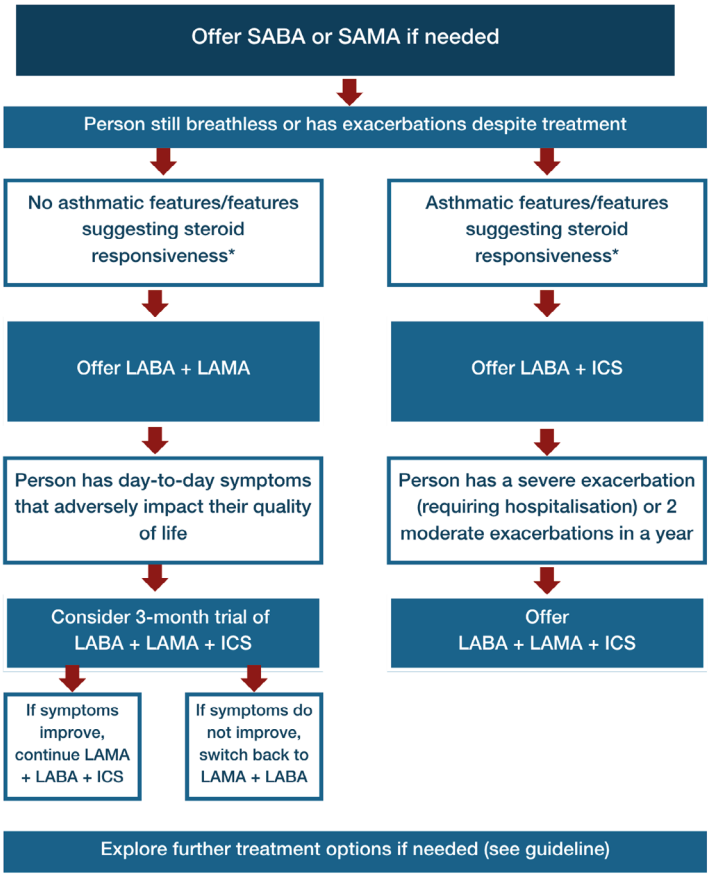
This is the first and major difference from the 2023 GOLD guidelines. Whereas GOLD focuses on symptoms and future exacerbation risk as the 'treatable traits' guiding pharmacotherapeutic decision making, NICE has continued to focus on the presence of asthmatic features as the main 'treatable trait'.

Management of patients with asthmatic features. For patients with features suggestive of an asthmatic component (secure diagnosis of asthma or atopy, higher blood eosinophil count, substantial variation in FEV_1 over time or substantial diurnal variation in peak expiratory flow), a combination LABA + ICS can be considered. A limitation here is that the cut-off for 'higher eosinophil count' is not specified although it is generally accepted as >300 cells/µL. Triple therapy with the addition of a LAMA can subsequently be offered for patients who experience a severe exacerbation (requiring hospitalization) or who experience 2 moderate exacerbations within a year.

Management of patients without asthmatic features. Patients without asthmatic features can be offered a LABA + LAMA and, if symptoms continue to impact their quality of life, a 3-month trial of triple therapy with LABA + LAMA + ICS can be considered. This approach differs from the 2023 GOLD report as it still allows for a trial of treatment with ICS even in the absence of a single point of evidence of underlying inflammation – blood eosinophils >300 cells/µL required by GOLD.

Unfortunately, the 2019 update did not address the concern around including an option for a 3-month trial of triple therapy for patients with ongoing breathlessness but no evidence of an increased risk for future exacerbations. As we have seen from the ECLIPSE study, ongoing breathlessness is not a good indicator for response to ICS therapy and it was for this reason that the 2023 GOLD update elected to require elevated eosinophils as a marker of underlying inflammation as a pre-requisite for ICS initiation. Allowing triple therapy as an option for patients with ongoing breathlessness is concerning as it is unlikely to prove benefit in relieving their breathlessness and may cause a delay in seeking alternative causes for their chronic breathlessness. This approach will mean that a proportion of patients will be escalated to triple therapy and receive an ICS from which they will gain no clinical benefit and which may place them at increased risk for pneumonia. While the NICE 2019 update recommends that patients whose symptoms do not improve after a 3-month trial of triple therapy should step down to a dual bronchodilator regimen without an ICS, whether this is feasible and currently part of routine practice is unclear.

Figure 4. NICE inhaled therapies algorithm[3]



* 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 FEV_1 over time (at least 400ml) or substantial diurnal variation in peak expiratory flow (at least 20%)

Updating the PCRS 'Keeping it Simple' approach

On reviewing the latest approaches from GOLD and NICE and reflecting on the latest evidence at the time of writing, the authors, representing PCRS, have reached a new consensus on the management of patients with COPD in the context of UK primary care and have updated the 'Keeping it Simple' algorithm (Figure 5). Indeed, the recent updates to the GOLD and NICE guidance reflect the approach, laid out by PCRS in the original 2017 document, to initial and follow-up pharmacological management of COPD. PCRS guidance on treatment decision-making considers both the treatable traits described in the 2023 GOLD guidance – breathlessness and exacerbations – as well as the asthmatic component which is a significant feature in the NICE guidance.

In the 2023 update, the three treatment groups remain the same and reflect the different clinical needs and likely underlying pathology associated with these treatable traits. Patients with an asthmatic component will require ICS and this should form a part of their initial treatment regimen.

- Patients with **predominant breathlessness** as their major clinical feature and without asthma will not benefit from ICS therapy and their treatment should focus on bronchodilation; SABA plus LABA or LAMA with progression to LABA + LAMA depending on the impact of their breathlessness on their daily activities. In this update, this pathway does not change.
- Previously, patients who were **predominantly exacerbating** would start on a SABA in addition to a single bronchodilator, either a LAMA or LABA. In this update, PCRS now recommends that the starting point for this group is dual therapy with LAMA+LABA in a single inhaler device in addition to SABA.

ICS (triple therapy) can be used in addition to dual bronchodilation in the predominantly exacerbating group if they continue to experience exacerbations, particularly if these are events that require hospitalisation.

Adding ICS is most likely to give benefit if eosinophils are >300 cells/μL and unlikely to produce benefit if <100 cells/μL. In this update, PCRS now recommends that when deciding to add ICS, attention should be paid to eosinophil levels. The index test should have been taken at a time when the patient is not exposed to oral corticosteroids or unwell with an exacerbation.

A trial of mucolytics can be considered for people with cough productive of sputum but only continued if there is clear symptomatic improvement. Routine use to prevent exacerbations is not recommended. A diagnosis of bronchiectasis should also be considered for people with COPD who have significant mucus production.

- For patients who have **COPD with asthma**, initial therapy in this update has changed to LABA+LAMA+ICS in a single inhaler device with SABA for rescue bronchodilation.

The new position follows the GOLD 2023 approach i.e. when an inhaled corticosteroid (ICS) is indicated, this should be prescribed as a long-acting beta2 agonist (LABA)/long-acting muscarinic antagonist (LAMA)/ICS triple inhaler rather than as part of dual LABA/ICS therapy—this is because LABA/LAMA/ICS triple therapy has demonstrated superior efficacy in reducing exacerbations and lowering mortality compared with dual LABA/ICS therapy.

At each stage, medication optimisation should be undertaken including checking the patient's inhaler technique and their adherence.[7] In the case of any patient with COPD requiring ICS, there should be careful consideration of whether a specialist review is required. People with asthma and COPD who have poor control may benefit from biologic therapies and a referral is required to consider this.

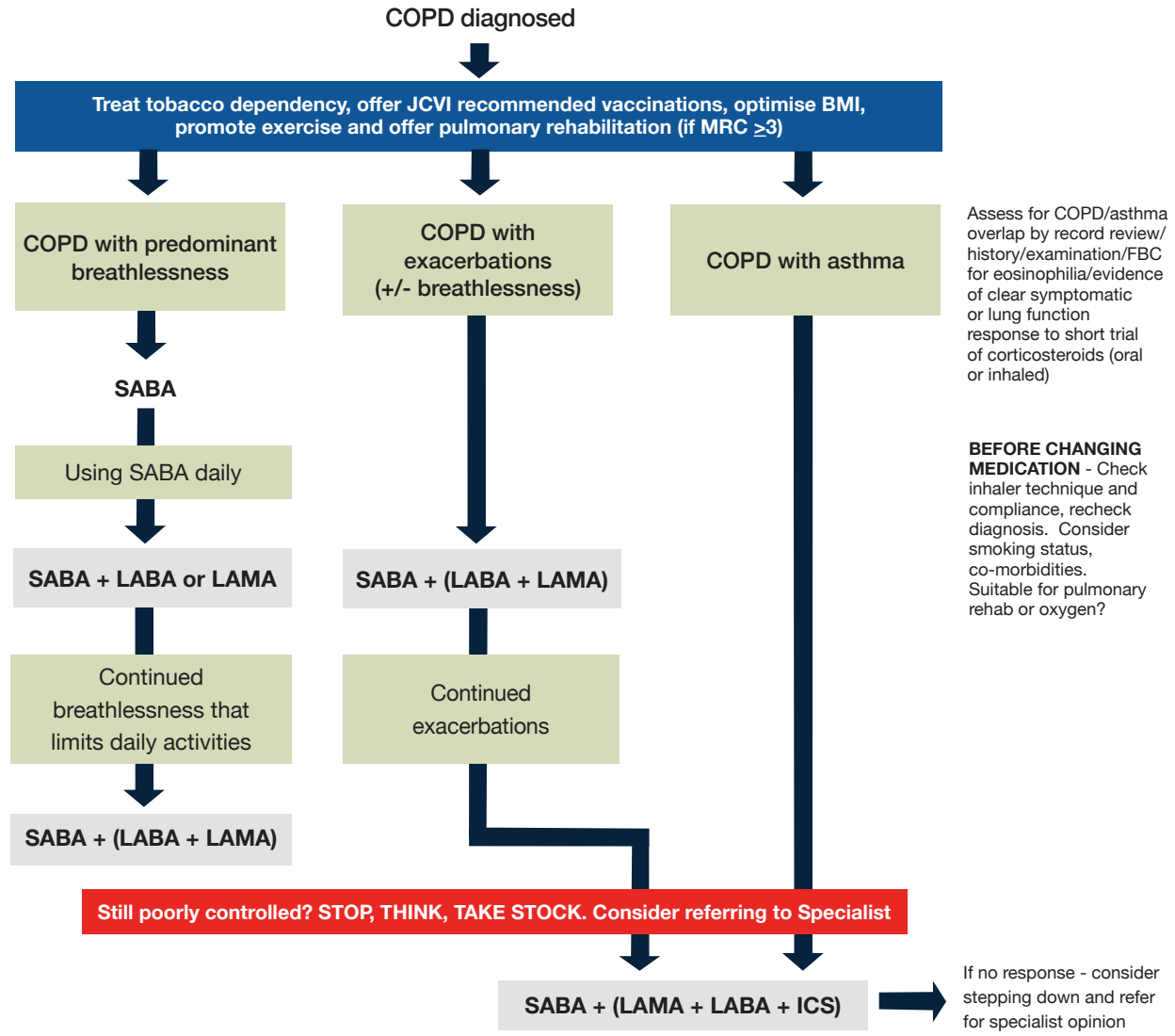
PCRS recommends the use of single inhaler devices where dual or triple therapies are indicated.[8]

In addition, ongoing monitoring of patients should include reviewing for comorbidities (especially alternative causes of breathlessness[9]) and whether pulmonary rehabilitation has been offered and attended as well as treating tobacco dependency.[10] Vaccinations should be offered according to current nationally recommended programmes and would currently include immunisation against influenza and SARS-CoV-2 annually and against pneumococcus, usually once after aged 65 or possibly 5 yearly depending on the underlying indication. The UK Joint Committee on Vaccination and Immunisation (JCVI) is currently exploring a vaccine programme against Respiratory Syncytial Virus (RSV) vaccination for older adults, though formal guidance is awaited.[11]

Conclusion

The 'Keeping it Simple' algorithm seen in Figure 5 describes the 2023 update of the PCRS consensus approach to treating COPD. Overall, both GOLD and NICE appear to be catching up with the pragmatic recommendations PCRS first made in 2017. Steroid stewardship, both oral and inhaled, remains relevant to avoid exposing patients to treatments that will not benefit them and which may in fact place them at risk for side effects. Looking back over the last decade, we have come a long way in our understanding of the heterogeneity of COPD and this has informed how best to manage patients according to the treatable traits that are most significant for them. While a cure for COPD remains elusive and treatment is largely reactive to clinical presentation, there is much we can do to ensure patients receive treatments that relieve their most impactful daily symptoms, optimise their lung function and reduce their risk for life-threatening exacerbations.

Figure 5. PCRS Keeping it Simple approach 2023



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Corticosteroids should be used with caution, if at all, in patients with active or quiescent tuberculous infections of the respiratory tract, untreated local or systemic fungal or bacterial infections, systemic viral or parasitic infections, or ocular herpes simplex because of the potential for worsening of these infections. *Systemic Effects of Corticosteroids:* potential systemic effects may include Cushing's syndrome, Cushingoid features, adrenal suppression, growth retardation in children and adolescents, cataract, glaucoma and more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression or aggression (particularly in children). When intranasal steroids are used at higher than recommended dosages or in susceptible individuals at recommended dosages, systemic corticosteroid effects such as hypercorticism and adrenal suppression may appear. 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References: 1. Ryaltris Summary of Product Characteristics. **2.** Gross GN, *et al.* Ann Allergy Asthma Immunol 2019;122:630–638. **3.** Segall N, *et al.* Allergy Asthma Proc 2019;40(5):301–310.

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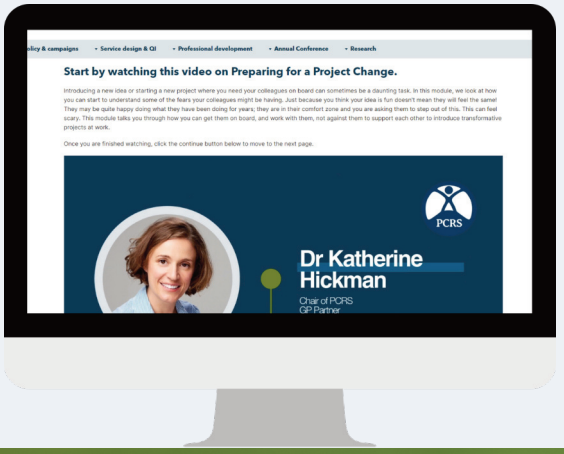

These online learning modules have been instigated and organised by PCRS. PCRS is grateful to Trudell Medical UK Ltd for the provision of sponsorship to support this programme. Trudell Medical has had no input in to the content of the modules.

Triple therapy in COPD

PCRS advocate a pragmatic approach to the pharmacological management of patients with COPD guided by the predominance of breathlessness and/or exacerbations and the presence or absence of comorbid asthma. Clinicians must undertake a holistic evaluation for alternative causes of persistent daily symptoms or repeated exacerbations and consider seeking advice from a respiratory specialist before escalating to triple therapy (a respiratory specialist may be a GP/nurse/consultant).

Background

Triple therapy for patients with chronic obstructive pulmonary disease (COPD) refers to the combination of long-acting muscarinic antagonists (LAMA), long-acting beta2 agonists (LABA) and inhaled corticosteroids (ICS). Given the small but increased risk of pneumonia for patients prescribed ICS as part of a triple therapy regimen, it is essential to that such treatment is only prescribed for patients likely to derive a clinical benefit.

Current guidance from NICE issued in 2019 advises that for patients with COPD and persistent symptoms on dual therapy (LAMA+LABA or LABA+ICS) a clinical review is conducted prior to initiating triple therapy to ensure pharmacological and non-pharmacological management is optimised and tobacco dependence has been addressed.[1] The review should also evaluate whether the acute episodes of worsening symptoms and any impact of day-to-day symptoms on quality of life are due to COPD and not caused by another physical or mental health condition or due to environmental/social factors such as poor living conditions.

Triple therapy can be considered for patients whose day-to-day symptoms are adversely impacting their quality of life OR have had a severe exacerbation requiring hospitalisation OR have had 2 moderate exacerbations within the previous 12 months. For patients taking LABA+LAMA whose day-to-day symptoms are adversely impacting their quality of life, a 3-month trial of triple therapy may be considered; if no improvement in symptoms (clinician assessment) or reduction in exacerbation frequency is achieved then patients should be switched back to LABA+LAMA. GOLD guidelines advocate that treatment should be guided by predominant breathlessness or exacerbations and that ICS therapy should be considered only as part of a triple therapy regimen and for patients with persistent symptoms and co-existing features of asthma or a raised eosinophil count (>300 cells/mL) while not receiving steroid treatment.[2]

PCRS position

- PCRS advocate a pragmatic approach to the pharmacological management of patients with COPD guided by the predominance of breathlessness and/or exacerbations and the presence or absence of comorbid asthma.[3,4]
  - Triple therapy should usually be reserved for patients with persistent daily symptoms or repeated exacerbations despite optimal dual therapy after a careful review of potential alternative causes.
  - Triple therapy is not generally beneficial for patients with COPD with predominant breathlessness without asthma, with no severe exacerbations, or fewer than 2 exacerbations in the last year.
  - Consider a single inhaler triple therapy device to improve adherence, reduce inhaler technique errors and reduce inhaler burden.
- Clinicians must undertake a holistic evaluation for alternative causes of persistent daily symptoms or repeated exacerbations which should include:
  - Review of diagnosis
  - Optimisation of pharmacological therapy (inhaler technique, adherence)
  - Optimisation of nonpharmacological therapy including pulmonary rehabilitation and vaccinations
  - Smoking cessation/tobacco dependence assessment
  - Co-morbidities
  - Any potential environmental/social factors (e.g. poor living conditions)
- If after holistic evaluation and treatment optimisation, daily symptoms or repeated exacerbations persist, clinicians should consider seeking advice from a respiratory specialist before escalating to triple therapy (a respiratory specialist may be a GP/nurse/consultant).

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PCRS Pragmatic Guides: Bronchoscopic and surgical options for COPD - the primary care role

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Introduction

Bronchoscopic and surgical treatments for people with COPD can improve their lung and exercise capacity, and quality and length of life for many years in addition to what medical treatments can achieve.[1] As new and safer techniques become available and pathways improve, it is critical that people who may benefit can access assessment for this highly specialist care at the right time.

Primary care services diagnose and treat the majority of people with COPD without requiring specialist referral. However, any primary care COPD service should be supported by and integrated with local multidisciplinary colleagues that can include specialist physicians, nurses, therapists, pharmacists and physiologists amongst others to ensure people with COPD are offered the right treatments that might include surgery. Integration can support consistent and seamless care, through development of shared guidelines, good communication between teams and professional relationship building.[2]

COPD is a condition where treatment options need to be re-evaluated and adjusted as the pathology progresses and symptoms change. The primary care based annual and post exacerbation reviews are opportunities to revisit whether someone is being offered the right care, based on the latest guidelines and available therapies.

It is possible that you may never personally be involved in the care of a patient suitable for COPD surgery as it is approximated that about only 1% of people with COPD may be suitable for a bronchoscopic or surgical intervention currently.[1,3,4] However, the benefit can be significant for those that are suitable.

The NICE NG 115 2018 guideline updated in 2019, for the diagnosis and management of COPD provides clear referral criteria, including for bronchoscopy and surgery, and works best when it is adapted to local guidelines and available services.

This pragmatic guide has been developed to highlight to people working in primary care what bronchoscopic and surgical options are currently available, what is in the experimental pipeline, who might be suitable and how primary care can work with specialists to help patients make the right choice for them, prepare for surgery, and provide support afterwards.

Green COPD care is the right COPD care. As symptoms change, treatments will need to adapt and specialist support may be needed. Safe and effective interventional techniques in the right person can keep people active and independent. The annual COPD review is a time to reflect whether the current care is still the right care.

Top Tips

1. Think surgery, think referral when you see a patient with severe emphysema.
2. Referring people with MRC3+ breathlessness for pulmonary rehab is essential before being considered for surgery.
3. Minimally invasive options to reduce lung volume can mean as little as a 3 day stay in hospital.
4. In the right people, surgery improves lung and exercise function, improves quality of life and lengthens life.

Identifying and referring people with COPD who might benefit

In 2021/22 the prevalence of COPD on GP registers in England using QOF data was 1.9%.[5] For a GP surgery of 10,000 patients this means that such a GP surgery would have 190 patients with COPD and if 1% are suitable to be assessed for lung surgery then it means only 2 patients per practice may be suitable for an intervention. At an individual clinician level, the experience would therefore be quite limited. It is likely to be the lead COPD primary care practitioner, often a nurse who is most likely to be familiar with such a patient through annual reviews and potentially post-operative care.

Herein lies the risk of the suitable patient being overlooked due to limited exposure and experience with the treatment options. However, there is a larger cohort than those suitable for bronchoscopic or surgical intervention where primary care will need support from secondary care, whether for assessment for oxygen therapy, specialist palliative care input, for people with rapid worsening or those with diagnostic uncertainty. Within this group will sit people with severe emphysematous disease, who within a secondary care COPD specialist setting can be considered for additional therapies that include surgery.

When someone has fulfilled the criteria for pulmonary rehabilitation referral and then completed the course, between 4.9% and 18.6% are suitable for a lung volume reduction intervention (LVR) MDT review.[6] LVR is the most common bronchoscopic or surgical intervention for COPD and currently the only method approved by the NHS in England

NICE has produced a table of criteria to help primary care decide when to ask support from specialists. The ideal scenario can be seen when such criteria are applied with relevance to the COPD pathways set up locally. The development of integrated approaches with GPs and other primary care HCPs working with specialist colleagues can ensure that patients move through these pathways with consistency. Indeed, if patient COPD data is recorded consistently and shared data agreements are in place it is possible to virtually scan a COPD list at population level to identify those who would benefit from a more highly specialist review. In the new primary care network structure in England for example, a network population of 50,000 people potentially has 10 people with severe emphysematous disease that might be suitable for surgery. In order to arrive at this 10 people, a greater number would require a CT scan and other more specialised tests. Therefore, a network approach to identification may be a solution to ensure people transition from primary to secondary care at the right time.

Where someone is specifically being referred by primary care for assessment for COPD surgery, ensuring that referral criteria are fulfilled is obviously a basic requirement. However, there is also a need to consider the psychosocial factors that might affect any final decision to proceed. Whilst it can be assumed that a shared decision-making approach between the patient and an MDT will be carried out it can be helpful on referral to ensure wider issues in the patient's life are communicated such as housing and family or carer support. There also needs to be a discussion pre-referral about potential unsuitability for currently available procedures and the need for a back-up plan. This might involve a referral to a breathlessness management specialist or a social care team or re-assessment of co-morbidities. The proposed pathway by assessment through an MDT would enable patients with emphysema not suitable for a currently approved NHS intervention to be able to access ongoing research studies with alternative developing bronchoscopic or surgical therapies.

In this table there are three reasons for referral that directly relate to requesting an opinion about surgery. It is somewhat unlikely that during an annual assessment any primary care practitioner will make this the focus of the referral letter as other features i.e. severity of disease, speed of symptom progression and exacerbation frequency are more likely to be of concern to the patient and practitioner. As lung volume reduction is more widely performed and practiced, and the procedures becomes more prevalent, patient perceptions about the procedures are likely to change.

Based on the two NICE approved techniques of LVR there are a group of patients with particular characteristics who are more likely to be offered surgery.

Primary care has a role in ensuring that the assessment and tests required to select people with these characteristics are offered, completed and recorded accurately where this is within the usual remit of primary care activity.

Table 1. NICE 2019 guidance on who to refer for specialist COPD care

Reason	Purpose
There is diagnostic uncertainty	Confirm diagnosis and optimise therapy
Suspected severe COPD	Confirm diagnosis and optimise therapy
The person with COPD requests a second opinion	Confirm diagnosis and optimise therapy
Onset of cor pulmonale	Confirm diagnosis and optimise therapy
Assessment for oxygen therapy	Optimise therapy and measure blood gases
Assessment for long-term nebuliser therapy	Optimise therapy and exclude inappropriate prescriptions
Assessment for oral corticosteroid therapy	Justify need for continued treatment or supervise withdrawal
Bullous lung disease	Identify candidates for lung volume reduction procedures
A rapid decline in FEV1	Encourage early intervention
Assessment for pulmonary rehabilitation	Identify candidates for pulmonary rehabilitation
Assessment for a lung volume reduction procedure	Identify candidates for surgical or bronchoscopic lung volume reduction
Assessment for lung transplantation	Identify candidates for surgery
Dysfunctional breathing	Confirm diagnosis, optimise pharmacotherapy and access other therapists
Onset of symptoms under 40 years or a family history of alpha-1 antitrypsin deficiency	Identify alpha-1 antitrypsin deficiency, consider therapy and screen family
Symptoms disproportionate to lung function deficit	Look for other explanations including cardiac impairment, pulmonary hypertension, depression and hyperventilation
Frequent infections	Exclude bronchiectasis
Haemoptysis	Exclude carcinoma of the bronchus

Table 2. NHS England commissioning guidance referral for LVR

Referral Criteria
Evidence of symptomatic hyperinflation due to emphysema with impaired quality of life. Medical Research Council (MRC) Dyspnoea Scale 3 or more
Non-smoker at least 4 months
Completion of a Pulmonary Rehabilitation programme within last 12 months or ongoing participation in a post-PR exercise programme.
Six-minute walk distance >140m or Incremental Shuttle Walk Test (ISWT) >80m
Forced Expiratory Volume in one second (FEV1) <50% predicted
Carbon Monoxide Diffusion Capacity (DLco) or Carbon Monoxide Transfer Coefficient Kco > 20% predicted
Residual Volume (RV): Total Lung Capacity (TLC) > 55%
RV> 150%
PaCO2<7KPa (partial pressure of carbon dioxide)
Body Mass Index (BMI)> 18
Unsuitable for surgery criteria
Severe co-morbidities such as renal, hepatic or cardiac failure, or other chronic respiratory disease such as pulmonary fibrosis
Severe progressive disease including disseminated malignancy
Severe pulmonary hypertension

NICE NG115 2019 guidance advises

1. **Any patient referred for assessment for LVR must have completed pulmonary rehabilitation (PR). They must be able to complete a 6-minute walk distance of 140 metres.**

In 2021/22, using available QOF data within the UK, 75.6% of people eligible for PR were referred.[5] The RCP Wales COPD audit showed that in 2018 to 2020 56.4% of suitable people were referred for PR.[7] The subsequent audit revealed this had reduced to 5.6% as a result of the pandemic. This was highlighted as a key improvement target for Wales. People attending PR will have the advantage of being more likely to be identified as suitable for LVR because they will be seen by specialist respiratory physiotherapists and other respiratory practitioners.

2. **They have severe COPD as measured by spirometry airflow findings i.e. FEV_1<50% of predicted**

The RCP Welsh COPD audit from data collected in GP practices in 2018 to 2020 demonstrated that 11.5% of people with a new diagnosis in the previous 2 years had a record of spirometry that would allow a severity assessment to be made. In the subsequent audit this had reduced to 1.9% as a result of the cessation of spirometry due to the pandemic. This was highlighted as a key improvement target for Wales.[7]

3. **Breathlessness affects their quality of life despite optimal medical treatment**

Optimisation of medical therapy should include:

- Vaccination against influenza, pneumococcus and COVID-19 according to current public health guidance.
- Treatment of tobacco dependence and prevention of relapse.
- Pulmonary rehabilitation
- Optimal inhaled and oral therapies according to local and national guidelines.

All of the above treatments can be organised and monitored in primary care with a small percentage requiring specialist advice about pharmaceutical therapies.

4. **Hyperinflation is assessed by lung function testing with body plethysmography and emphysema is confirmed on an unenhanced CT chest**

Body plethysmography is a lung function test that would not be requested by primary care but would be part of the pre-assessment testing after referral to secondary or tertiary care. However, the identification of emphysema is within the remit of primary care in certain circumstances.

The 2019 NICE guideline on diagnosis of COPD recommends a CXR is performed to exclude other pathology. Hyperinflation is sometimes reported on CXR and in the presence of other COPD diagnostic criteria is suggestive of emphysema but not diagnostic.

The RCP Welsh COPD audit from data collected in GP practices from 2018 to 2020 demonstrated that 33.3% of people with a new diagnosis of COPD in the previous 2 years had a record of a CXR either 6 months before or 6 months after diagnosis. In the subsequent audit this had reduced to 6.4% due to pandemic factors.[7]

A CT is required to diagnose emphysema. CT chest availability by GP referral varies across the UK but where it can be requested by primary care then a CXR showing hyperinflation would be an indication for request. In recent years NICE has reviewed the evidence for GP referral for CT rather than CXR when suspecting serious disease such as lung cancer and COPD. The guidance however remains that CXR is the primary care imaging of choice in this circumstance.[8] However, in order to improve access to cancer diagnostic services as a result of post pandemic backlogs, NHS England will be allowing GPs better access to CT which may reveal more emphysema also due to common symptoms and causation for cancer.[9]

The globally relevant GOLD COPD report suggests that in a resource constrained system people suspected as having COPD should also have a CT when:

- They have persistent exacerbations - 2 or more per year
- Symptoms are worse than their lung function-based disease severity grade
- There is an FEV_1 < 45% predicted
- There is hyperinflation on CXR
- They would fulfil the criteria for lung cancer screening

In 2022, the national screening committee for the UK made a recommendation for the first time that people with a high risk for lung cancer should be screened by CT.[10] This is likely in coming years to translate into more people receiving a diagnosis of emphysema, which is also the group that when other features are present can benefit from LVR.

CT is an essential test as lung cancer is more common in people with COPD and 30% of people with COPD also have signs of bronchiectasis on CT.[11] This would affect their suitability for LVR but also would influence their medical therapies.

Bronchoscopic and surgical procedures for COPD

The 2019 NG115 COPD diagnosis and management guidance from NICE[1], includes positive recommendations for bronchoscopic and surgical interventions. The focus is mainly on the techniques that reduce lung volume, a treatment for lung hyperinflation due to severe emphysematous COPD. The 2023 global GOLD COPD strategy report[11] also explores lung volume reduction techniques and in addition considers interventions that target different pathological pathways that cause COPD symptoms. This includes 'airways predominant' treatments that deal with problems such as excessive airway collapse and mucus production.

NICE NG115 states that, people with severe emphysematous COPD show improvements in lung function, exercise capacity, quality of life and long-term mortality as a result of lung volume reduction.

The 2023 GOLD report explores and makes recommendations on a wide range of surgical techniques based on evidence and expert opinion which will be included in this guide. However, many are experimental or not yet available and so we highlight the NICE NG115 recommendations that consider what was available within the NHS in England in 2019.

A review of the literature shows that COPD interventional treatments are now developing at some pace. In 2021 NICE IPG714 provided new guidance on bronchial nerve ablation techniques.[12]

In England there are currently two procedures which are considered suitable for commissioning which is lung volume reduction by i) surgery or ii) endobronchial valve for severe emphysema in adults.[4] The other surgical options mentioned here are not available in the NHS, are considered experimental and will require randomised controlled trial evidence before guidance can support their use.

Procedures to reduce mucus production

Liquid nitrogen cryospray

This experimental procedure may help with chronic bronchitis type COPD. The bronchial wall epithelium is frozen up to a depth of 0.5mm to ablate the mucus producing glands, without scarring the airway.[11]

Rheoplasty

Rheoplasty is an experimental therapy that delivers short bursts of high frequency electrical energy to the airway epithelium in order to achieve the same effect of liquid nitrogen cryospray.[11]

Procedures to reduce exacerbations

Targeted lung denervation[11]

The aim is to produce permanent bronchodilation and decrease mucus production by ablating the parasympathetic nerve where it runs along and adjacent to the outside of the mainstem bronchus.

Airway dilation depends on a balance of autonomic nervous system signals from its sympathetic and parasympathetic arms. Inhaled therapies e.g. beta agonists and muscarinic antagonists also use these pathways to achieve dilation. In addition, the parasympathetic drive affects mucus production. Impairing the parasympathetic supply to the airway increases dilation and reduces mucus distal to the point of ablation.

The ablation is carried out by activating a high radiofrequency signal via an electrode placed within the bronchial lumen adjacent to the parasympathetic nerve via a bronchoscope. It is considered to be a day case procedure.

In 2021, NICE IPG 714 advised there was insufficient trial evidence to recommend this procedure, however it supported development of RCTs that compare it with 'sham' interventions. The safety and adverse effect profile of this procedure requires better documentation before it can be recommended.[12]

Procedures to relieve breathlessness

Giant bullectomy

This is an uncommon intervention but one that is recommended by NICE. It is performed when an emphysematous bulla is so large that it occupies one third of the space that the lung would normally occupy in its hemithorax space (See Figure 1). Removal allows the compressed healthier lung to re-inflate which in turn improves cardiac function and musculoskeletal involvement in breathing. NICE NG115 recommends bullectomy for emphysematous bullae based on the committee's knowledge and experience as trial evidence is too limited.

This intervention can be carried out using video-assisted thoracoscopic surgery (VATS) which is less invasive than open chest surgery and with lower risks.

Lung volume reduction surgery[1,3,11]

Hyperinflation of the lung is a key manifestation of emphysema. Emphysematous sections of the lung do not deflate easily because the damaged terminal bronchioles and alveoli lose the inherent elasticity that usually enables recoil, pushing air out, during expiration. The air therefore becomes trapped in these terminal portions of the bronchial tree imposing excessive pressure on any healthy lung within that hemithorax. The extra effort that must be exerted to ensure oxygen reaches the remain-

Figure 1. Right hemithorax emphysematous bulla suitable for surgery

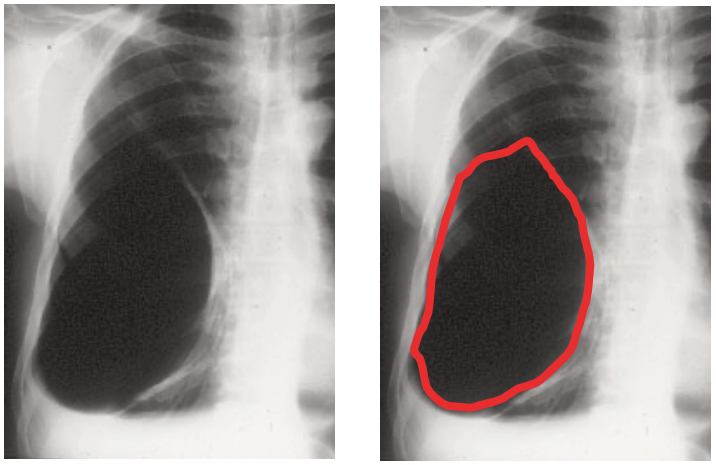
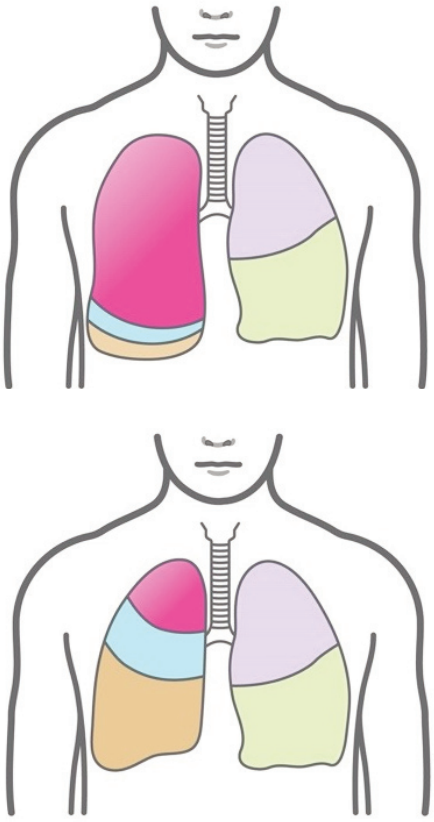


Figure 2. Before (top) and after (bottom) illustrations of a right upper lobe volume reduction procedure - from University Hospitals Coventry and Warwickshire patient information leaflet



ing healthy alveoli leaves a person fatigued, less active and more breathless. Cardiac function and circulation within the thorax are also affected due to the abnormal pressures created adding to the symptom burden.

LVRS, can be performed via open surgery e.g. video assisted (VATS) and robotically assisted (RATS) and also through even less invasive bronchoscopic techniques, described below. The aim with all techniques is to reduce the impact of the most emphysematous lung parts by resecting them e.g. via open surgery or VATS/RATS or by deflating them and shifting ventilatory effort to the healthier lung (See Figure 2).

The evidence supports LVRS, in particular, for those with predominant upper lobe emphysema who also have low pre-operative exercise tolerance, after completing pulmonary rehabilitation.

Selection of the right candidate is vital as mortality increases with some patient characteristics when compared to optimal medical management. People with low BMI, a very low FEV_1 (<20% predicted) and emphysema that affects more parts of the lung more diffusely (homogenous emphysema) have higher mortality.

People with significant co-morbidity such as pulmonary fibrosis, pulmonary hypertension and heart failure may not be suitable.

The most common adverse effect post operatively is air leaking from where the lung tissue has been excised. Other problems include pneumonia, DVT and coronary thrombosis.

In appropriately selected people, LVRS prolongs survival by 2 years. Currently, fewer people are receiving this surgery than it is estimated would benefit. This is due to lack of referral, availability, and fears about the risks of thoracic surgery itself and the amount of post procedure support available.

Endobronchial one-way valve (EBV)[1,3,11]

In this NICE NG115 recommended bronchoscopic treatment, a one-way valve is placed in one or more of the larger airways supplying the most diseased hyperinflated emphysematous lung (See Figures 3 and 4) . The components of these valves include a nickel-titanium alloy known as nitinol and silicone.

This permits trapped air to be released from the affected lobe during expiration but prevents re-inflation on inspiration and so collapsing the diseased lobe. This treatment has best results when there is no ventilatory connection between the affected lobe that is being treated and the adjacent lobe. An intact interlobular fissure is therefore predictive of a longer survival, better exercise capacity and better quality of life.

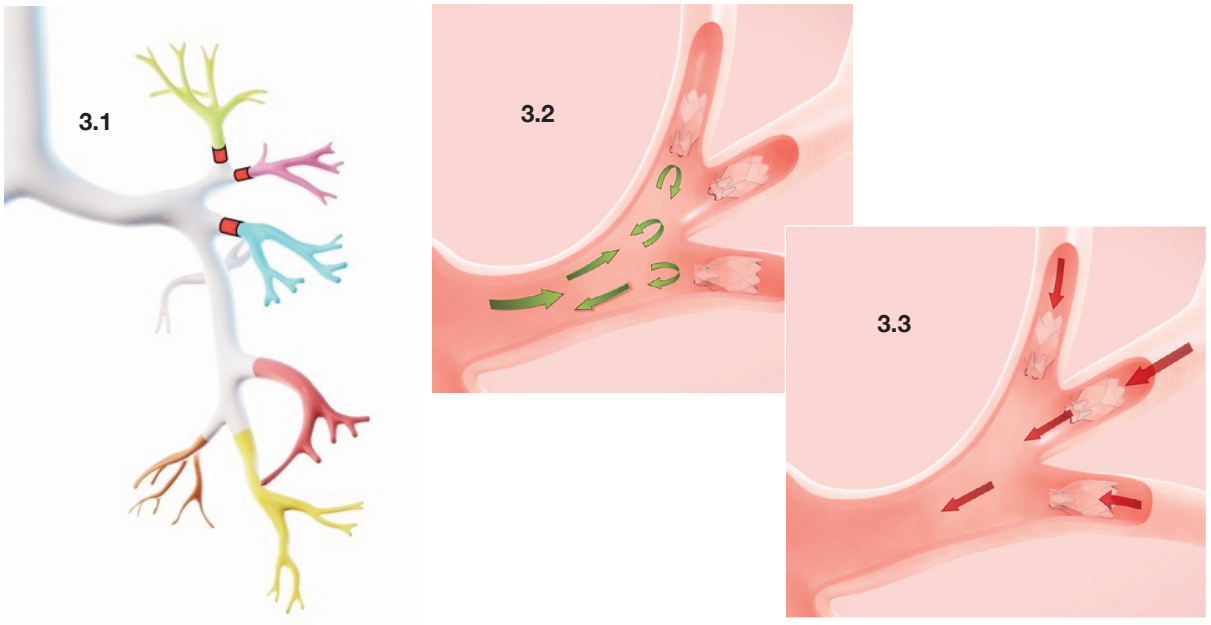
In general, in the NHS in England, EBV is offered before LVRS due to the lower risk profile, resulting from an endoscopic approach and the fact it is reversible. Pneumothorax is a more common adverse effect seen with this procedure because the acute volume reduction in one lobe can result in sudden volume expansion in the adjacent lobe which can cause tearing of lung tissue.

Endobronchial nitinol coil placement[13]

This is a more recently developed technique and remains experimental. It offers the potential for people with both upper and lower lobe emphysema and in multiple sites. Interlobar fissures do not need to be intact and collateral ventilation can be present.

Nitinol is an alloy of nickel and titanium and is used because of its extreme elasticity. Between 5 and 15 coils are inserted in a typical procedure. The coil is passed in its compressed form via a bronchoscopic catheter and on arriving at the chosen bronchial site it is released where it springs open. The coil then pulls against the bronchial walls as it recoils to its resting position which then

Figures 3.1/2/3. One-way EBVs showing placement in three large airways (3.1) which will restrict air entry into (3.2) and allow escape (3.3) in 3 segments of the upper lobe of the left lung.



prevents air entering the lung distal to it during inspiration and so reducing the volume taken up by the diseased part.

NICE IPG 517 advise that that it is only offered as part of a clinical trial as it is not clear from the evidence whether it is better than currently approved lung volume reduction surgery. It is not currently recommended for commissioning by NHS England. They concluded that in line with NICE NG115, coils and other novel technologies should remain within the research setting. Significant complications can include pneumonia, pneumothorax, haemoptysis and exacerbations.

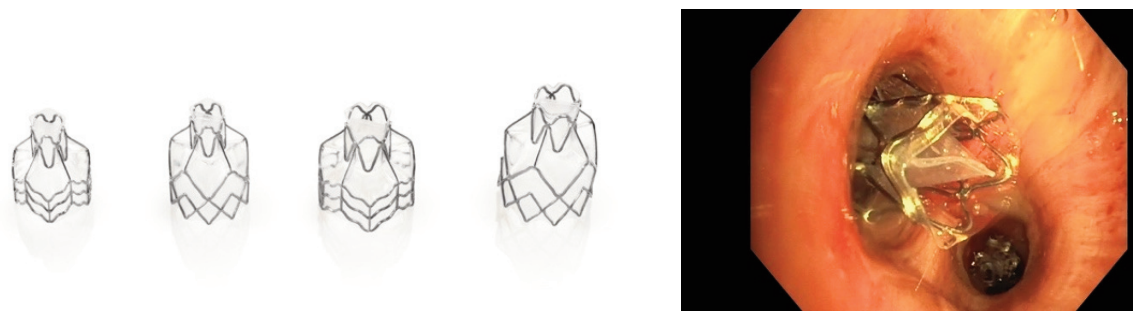
Large airway stenting[11]

This technique remains experimental and has not been reviewed by NICE IPG 517. In this bronchoscopic procedure a perforation is made in the wall of a large airway near to an area of emphysematous lung. A tube made of inert material is then inserted to maintain this aperture. Air will flow both ways but the lower resistance enabled by expired air emptying directly into a large calibre airway will enable better escape of trapped gas on expiration.

Thermal vapor ablation[14]

Bronchoscopic thermal vapour (steam) ablation is an experimental procedure for upper lobe emphysema and is usually done using general anaesthesia. The most severely affected and hyperinflated lung segments are targeted. A catheter is used to deliver a dose of thermal vapour. A balloon at the tip of the catheter is inflated to seal off and protect tissue proximal to the

Figure 4. One-way EBV showing its elasticity and placement in a main bronchial airway



targeted area. The thermal vapour released distal to the balloon ablates the diseased emphysematous tissue. As the tissue dies and becomes remodelled with natural repair processes over 4-6 weeks the space left can be taken up by healthier lung. This treatment can be repeated over time, targeting different segments as the patient's disease progresses. There is an initial worsening of respiratory symptoms in the first 2 to 4 weeks due to the intended surgical inflammatory response.

NICE IPG 652 advise that it is only offered as part of a clinical trial as it is not clear from the evidence whether it has better outcomes than other forms of lung volume reduction surgery.

Lung transplantation[1,11]

COPD is the reason for lung transplantation in 30.6% of cases globally. People, selected for this NICE NG115 recommended procedure have usually been assessed as not suitable for LVR, which should be a first choice as it has lower morbidity and mortality. However, previous LVR should not be a barrier to having a lung transplant.

The selected patient is more likely to be prone to very frequent exacerbations associated with CO2 retention, very low FEV1 (< 15-20%) and with co-morbid pulmonary hypertension.

Based on current evidence the indication for the treatment is primarily to improve quality of life rather than extend life. Those with alpha 1 antitrypsin deficiency (AATD), however, are an exception and younger people (<60) having bilateral transplants may also see improved lifespans. On average, people live for 5.9 years after lung transplant surgery for COPD.

A balance between improved quality of life versus living with a transplanted organ needs to be considered carefully. The most common complications are acute rejection, bronchiolitis obliterans, infections and lymphoid system tumours.

Preparing for an intervention

Once a patient has been identified as potentially suitable for an intervention they will be seen in a tertiary service that will include assessment by a multidisciplinary team. Factors that impact on any decision to proceed include:

- Functional capacity and fitness for the procedure
- Co-morbidity
- CT results
- Lung function results
- Result of the walk test
- Results of a lung ventilation-perfusion scan (VQ)
- Assessment of collateral ventilation between target area and adjacent lung.

Information will be given about what the procedure involves depending on the technique used, recovery time, complications and expected outcomes.

Figure 5. Scar from a thoracoscopic (VATS) left lung volume reduction surgery

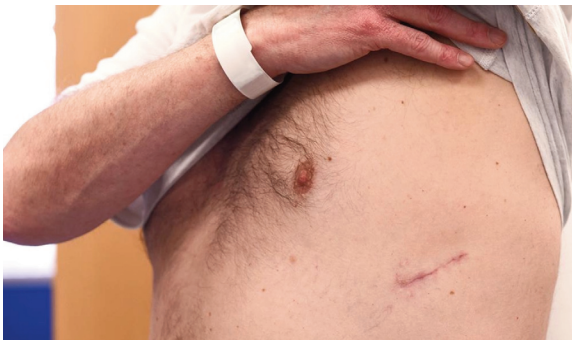


Image source: Asthma and Lung UK - Lung volume reduction surgery (LVRS)

LVRS using the videoscopic or robotic thoracoscopy route is a significant surgery that requires a general anaesthetic and a longer hospital stay. EBV insertion is bronchoscopic but also tends to be done under general anaesthetic and involves a shorter stay. It takes about an hour to insert the valve(s).

Asthma and Lung UK have a good web page providing more advice about LVRS via the VATS technique and EBVs. This includes a 15-minute patient video by Prof Hopkinson from Imperial College, London where much of the research into lung surgery for COPD has been performed to date.

There are helpful patient leaflets from other lung surgery units in the UK including University Hospitals Coventry and Warwickshire and Cambridge University Hospitals .

Helping people after an intervention

- LVRS using the minimally invasive VATS technique usually requires a 4-10 day stay in hospital and a chest drain will be in situ to allow air to escape from the thoracic cavity whilst healing completes. It takes 1-3 months to recover fully from LVRS with people experiencing more breathlessness, coughing and pain.
- The EBV procedure usually involves a 3-day stay in hospital and recovery is 2-3 weeks. About 25% will have an air leak post op and may need to have a temporary chest tube until it drains. Patients should commence an inpatient post-op exercise programme prescribed by a physiotherapist and are usually referred back to PR to enhance post-op recovery.

Post-intervention people will benefit most if they continue to be medically optimised. All should have a self-management plan regularly reviewed that includes discussion around symptoms,

tobacco use, vaccinations, inhaler technique, exercise and exacerbation management.

References and more information

PCRS delivered a webinar hosted by expert speaker Beverley Bostock, Gloucester and Dr Neil Greening at the University of Leicester. You can watch the webinar on demand; simply click on the QR code or use this link - https://qrco.de/beZJqV

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The role of primary and community care in the assessment and management of COVID-19 in Winter 2023/24

Respiratory infections are very common in winter and can be complex to assess. Infection with SARS-CoV-2, whilst prevalent year-round,[1] is also more significant in winter and this article focuses on the assessment and management of people presenting with COVID-19 illness, as winter 2023/24 approaches.

Helping people to avoid developing severe COVID-19 illness is a key primary care activity. Organising and encouraging people to have immunisation against SARS-CoV-2 is important as this is a highly effective and critical intervention in this regard.[2] Each UK nation has a slightly different approach when deciding on eligibility for a free vaccine for this winter.

Many clinicians are already seeing patients affected by the impact of austerity measures on their ability to keep warm and well-nourished and the article also explores how inequality factors associated with worse COVID-19 outcomes can be mitigated against.

Before SARS-CoV-2, the clinician assessing someone with respiratory symptoms would have considered possible causes such as influenza virus and pneumonia-causing bacteria because antimicrobial therapies, when used in a timely way, can avoid progression to more severe illness. Pre-pandemic, respiratory antiviral use was indicated specifically for suspected influenza and was available to prescribe once centrally approved by public health experts monitoring circulating flu virus levels and under fairly strict criteria.

The COVID-19 pandemic significantly changed our understanding of antivirals and the rapid advancement in knowledge has demonstrated that early and appropriate use of antivirals has not only helped with reducing the risk of admission of people infected but also prevented the need for intensive care and avoided deaths.[3]

Subsequently, a further rapid phase of testing COVID-19 antiviral therapies has resulted in new recommendations in 2023 and these are detailed within the updated NICE guideline NG1913. The recommendations now include neutralising monoclonal antibody (nMAB) therapies that target SARS-CoV-2, providing new therapeutic options that have the potential to be prescribed and administered in primary and community care this winter, assuming this comes with appropriate commissioning.

The updated NICE NG191 guidance document highlighting these therapies now incorporates all the multiple rapid guidelines that were developed during the pandemic into a single more accessible guide. Many of the recommendations made early in the pandemic were based on the consensus of the guideline expert panels with supporting information being limited. These have now been reviewed, again including topic expert opinion but also more recent evidence, with updating of recommendations where needed.

Assessing the patient with suspected SARS-CoV-2 infection

Assessing severity of disease, risk of progression and place of care

When someone presents with symptoms consistent with COVID-19 illness, an assessment of severity will be required. Those presenting in the community with non-severe disease can then be considered for interventions that ease symptoms and for eligibility to have medicines that prevent the progression of the disease. Most people who have been immunised will have mild illness.

Table 1. NICE NG191 signs of severe COVID-19 illness[3]

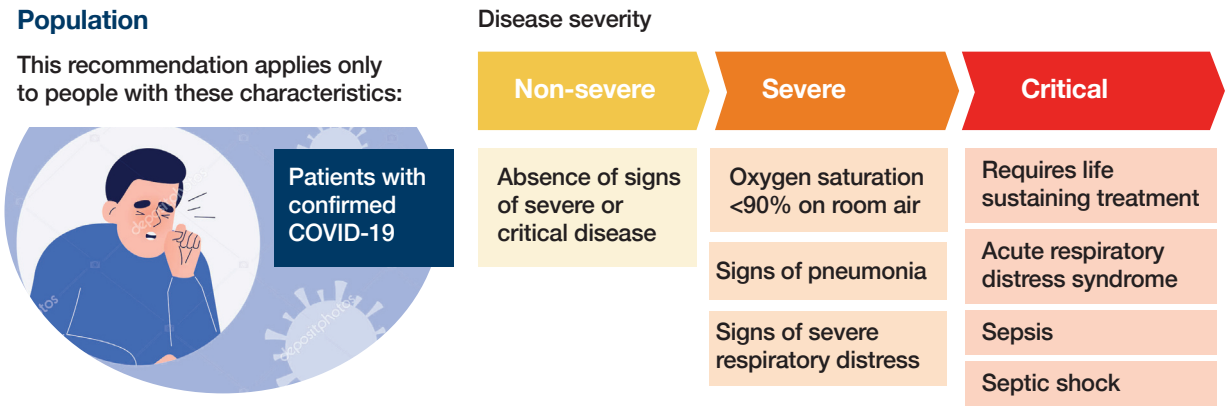
Severe shortness of breath at rest or difficulty breathing **
Reduced oxygen saturation levels measured by pulse oximetry *
Coughing up blood
Blue lips or face
Feeling cold and clammy with pale or mottled skin
Collapse or fainting (syncope)
New confusion
Becoming difficult to rouse
Reduced urine output

*NHS England has provided principles and documentation to support the use of pulse oximetry in primary community care including a self-monitoring diary[4]

** NICE advise that assessing shortness of breath is important, but may be difficult via remote consultation. Tools such as the Medical Research Council's scale[5] can be useful.

Funding has been provided to The Primary Care Respiratory Society as a grant by Pfizer Ltd. Pfizer Limited has not been involved in the selection of author(s), review or the content of this article.

Figure 1. WHO CV-19 illness severity classification



Adapted from an Infographic co-produced by the British Medical Journal (BMJ) and MAGIC7 (a research and innovation programme for digital user-friendly guidelines, evidence summaries and decision aids). Designer Will Stahl-Timmins. https://www.bmj.com/content/370/bmj.m3379

Those with severe disease need admission, and those with less severe disease may be (as always) managed in the community, or more recently go to an acute respiratory infection (ARI) hub to assess further or potentially be admitted to a virtual ward.

Table 1 shows the findings within community care indicating the severity and need to follow appropriate local pathways.[3]

The NICE NG191 guide recommends a diagnostic classification system adopted by the World Health Organisation (WHO) in their 2023 Therapeutics and COVID-19 Living Guideline[6] (See Figure 1).

General practice is familiar with the categorisation of higher-risk cohorts for winter infection due to the annual call-up to specific groups for influenza vaccination. As new therapies for treating COVID-19 have come online, guidance about the risk for progression of COVID-19 illness has been developed. In March 2023, The Department of Health and Social Care (DHSC) defined the highest-risk clinical subgroups who if exposed to community infection with SARS-CoV-2 should be considered for specific COVID-19 therapies.[8] This guidance has also been adopted by NICE.[9]

The categories will look familiar to the 'flu cohorts', but the criteria and parameters are narrower than those for flu immunisation eligibility. It should be noted for chronic respiratory disease, that only those with the most severe disease are eligible to receive treatment with these novel antivirals.

The NICE rapid guideline NG191 on managing COVID-19 highlights particular inequality characteristics and recommended actions to support these individuals in managing COVID-19 and any associated complications.

Testing for SARS-CoV-2 winter 2023/24

NHS COVID-19 rapid lateral flow tests are no longer free for most people.[13] However, free tests can be ordered by people who are identified as eligible to receive COVID-19 treatments (See table 3).

Each nation has web information about testing eligibility and how to obtain them.

England
https://www.nhs.uk/nhs-services/covid-19-services/testing-for-covid-19/who-can-get-a-free-nhs-covid-19-rapid-lateral-flow-test/

Northern Ireland
https://www.nidirect.gov.uk/articles/coronavirus-covid-19-testing-and-stay-home-advice

Scotland
https://www.nhsinform.scot/illnesses-and-conditions/infections-and-poisoning/coronavirus-covid-19/coronavirus-covid-19-treatments/

Wales
https://www.gov.wales/get-tested-coronavirus-covid-19

NICE NG191 treatment options for confirmed COVID-19 in primary and community care[3]

The vast majority of those infected with COVID-19 will not have severe disease and will not be in a higher risk category for severe disease. Immunisation against SARS-CoV-2 is a critical intervention for the most at risk to help avoid severe disease.[2] Most

Table 2. People at higher risk of progression to severe COVID-19 illness - NICE[9]/DHSC[8]

Adults	Down's syndrome, any chromosomal disorder affecting immunity, specialist diagnosed immunodeficiencies
	Solid cancer higher risk categories - metastatic, lung, recent chemotherapy, radiotherapy or surgery
	Haematological disorders - blood cancers, stem cell transplant, sickle cell disease, thalassemia and rare anaemias
	Renal - transplant, chronic kidney disease stage 4/5
	Liver - Cirrhosis and other severe disease, transplant
	People with organ transplants
	Respiratory - asthma if on oral steroids or other immune suppressants - note very small numbers - COPD - most severe disease, defined as on LTOT or NIV, FEV1 <50% predicted and exacerbating (4 courses of oral steroids in 1 year) - note very small numbers - ILD - all patients with idiopathic pulmonary fibrosis, and most people in other ILD groups - Anyone receiving home ventilation - Pulmonary hypertension - more severe disease
	HIV/AIDS - untreated HIV (high viral load) AIDS defining illness, CD4<350 or CD4>350 if other factors e.g. alcohol, homeless, age, other chronic disease.
	Neurological - neuromuscular respiratory failure e.g. MND, conditions needing immune suppression e.g. MS, dementia when severe frailty associated,
Children (Older than 12 and younger than 18 and > 40Kg)	Substantial risk - Complex life-limiting neurodisability with recurrent respiratory infections or compromise - rare
	Significant risk - 2 or more of: - Primary immune deficiency - Secondary immune deficiency e.g. chemotherapy, uncontrolled HIV - very rare in primary care - Immune suppressant therapies e.g. chemotherapy recently. Steroids are included in this criterion but NOT inhaled and only very high daily and prolonged doses i.e. corticosteroids > 2mg/kg per day every day for the last month. - Other conditions - includes BMI>95th centile, severe respiratory disease e.g. Cystic Fibrosis, severe disease of e.g. kidney, cardiac, liver. - Asthma - CYP with severe asthma who have had an intensive care admission in the last year

people, once assessed as having mild illness will only need advice about control of symptoms until they settle.

For those assessed and found to not have severe illness but who are at increased risk of progression, there are a number of drugs available.

Since the pandemic, further clarity on the efficacy and safety of those medicines recruited rapidly during the pandemic has resulted in new guidance about use but also new medicines, in particular antivirals and neutralising monoclonal antibodies are emerging, some of which have the possibility of being used in primary and community care settings.

Symptom Control: Cough, fever, breathlessness, anxiety and delirium

Managing cough (NICE NG191) - See Figure 2

- In general people should avoid lying on their backs as this may make a cough less effective.
- Anyone over 1 year of age can use a teaspoon of honey to soothe the symptom of a cough.
- Short-term use of codeine linctus, codeine phosphate tablets or morphine oral solution can be used in those over 18 with more distressing cough. The PCRS view is that this option should be for very distressing coughs and only if nothing else works due to the risks of sedation with opiates.

Managing fever and dehydration

- Drink fluids to avoid dehydration. People with COVID-19 illness may be at risk of acute kidney injury (AKI) due to dehydration at all stages of the illness.
- Use paracetamol or ibuprofen whilst symptomatic and then stop when symptoms settle.

Managing breathlessness

- Keep the room cool
- Use relaxation and breathing techniques and body position changes
- Improve room air circulation by opening a window or door
- Use a fan over the nose and mouth
- If hypoxia is causing breathlessness but the COVID-19 illness has been assessed as not severe then a trial of home oxygen can be considered after referral to a trained oxygen prescriber

Figure 2. Treatments for managing cough in people 18 years and over[3]

Treatment	Dosage
Initial management: use simple non-drug measures, for example, taking honey	A teaspoon of honey
First choice, only if cough is distressing: codeine linctus (15 mg/5 ml) of codeine phosphate tablets (15 mg, 30 mg)	15 mg to 30 mg every 4 hours as required, up to 4 doses in 24 hours. If necessary, increase dose to a maximum of 30 mg to 60 mg four times a day (maxiumum 240 mg in 24 horus)
Second choice, only if cough is distressing: morphine sulfate oral solution (10 mg/5 ml)	2.5 mg to 5 mg when required every 4 hours Increase up to 5 mg to 10 mg every 4 hours as required If the person is already taking regular morphine increase the regular dose by a third

Notes: See the BNF and MHRA advice for appropriate use and dosage in specific populations.
All doses are for oral administration.
Consider the addiction potential of codeine linctus, codeine phosphate and morphine sulfate. Issue as an 'acute' prescription with a limited supply. Advise the person of the risks of constipation and consider prescribing a regular stimulant laxative.
Avoid cough suppressants in chronic bronchitis and bronchiectasis because they can cause sputum retention.

Managing anxiety, delirium and agitation

- The NICE NG191 guidance suggests that exploring concerns and anxieties during the acute illness can help manage symptoms.

NICE supports the short-term use of benzodiazepines when social and psychological interventions are not sufficient. This is a very rare last resort that should be approached with care.

Additional considerations for COVID-19 symptoms co-existent with asthma, COPD and or other chronic respiratory illness

People with COPD and asthma are no more likely to get infected with SARS-CoV-2 but are at a higher risk of worse outcomes from COVID-19 compared to the background population and are therefore included in vaccination campaigns and in eligibility criteria for free testing and antiviral drugs.

- Consider whether the features of asthma / COPD / CRD exacerbation are present
- Review their action / self-management plan
- Ensure regular therapies are being taken with appropriate technique if relevant and adjust according to their action / self-management plan.
- Use rescue medication as needed and check spacer use if the device is a pMDI.
- Check supplies of emergency medicines such as rescue antibiotics and oral prednisolone in accordance with their personal self-management plan

Therapies that can reduce progression to severity or treat severe disease

There are four classes of medicine currently recommended and available in the NHS to help avoid progression to severity.

Four (three in Wales) antivirals or nMABs are available for use in primary and community NHS care. More antivirals and nMABs are available for hospital-only care and there are also the options of oral corticosteroids and low molecular weight heparin (LMWH) for hospital use only.

A number of medicines that may have been used during the pandemic such as inhaled budesonide and some antibiotics are not recommended though some have research recommendations and may be used in trials.

Antivirals and neutralising monoclonal antibodies

There are currently three antiviral medicines available for use, all of which are suitable for use outside of hospital. Two of these (remdesivir and molnupiravir) are still under assessment by NICE but with interim use recommendations. There are five nMABs that have been reviewed by NICE, of which three have been approved for use, one of which can be used outside hospital (Table 3). The latest review came in February 2023 with three new approvals.[14]

- An antiretroviral combination medicine, *nirmatrelvir plus ritonavir* - known as Paxlovid
- Two nMABs
  Sotrovimab - known as Xevudy
  Tocilizumab - known as RoActemra

Table 3. Winter 2023/24 eligibility and indications for antiviral and nMAB use.

		NICE Guidance	What this means for primary care
Antivirals	**Nirmatrelvir plus Ritonavir**	In adults who do not require oxygen and have an increased risk for progression to severe disease* Use within 5 days of onset of symptoms **Draft** partial review of guidance August 2023[16] recommends use additionally in: • Aged 70 and over • BMI 35 or more • Diabetes • Heart Failure	Suitable for use in mild COVID-19 illness in primary care. Both drugs come as tablets, twice daily dose for 5 days.
	Remdesivir	Clinical and cost effectiveness is currently under review[17]. Final guidance not expected until late 2023 at the earliest. Interim 'conditional' recommendations: 1) Consider a 3-day course for CYP >40kg and adults who • do not require oxygen and have • within 7 days of onset • an increased risk for progression to severe disease • Adhere to NHSE criteria18 2) Consider a course (up to 5 days) for people with • COVID-19 pneumonia • Hospitalised and using low flow oxygen	Suitable for use outside hospital if NHSE criteria fulfilled and according to their guidance.[18] Not available in Wales. Powder for infusion. 3-day course if not hospitalised. There are feasibility concerns about setting up an infusion service in primary care.
	Molnupiravir	Clinical and cost effectiveness is currently under review[17]. Guidance not expected until late 2023 at the earliest. Interim 'conditional' recommendations: Consider a 5-day course for adults who • do not require oxygen • within 5 days of symptom onset • an increased risk for progression to severe disease* • Adhere to NHSE criteria[18]	Guidance awaited with interim conditional use. It has the potential for use in primary and community care. Comes as a hard capsule, 4 capsules twice daily.
Neutralising monoclonal antibodies (nMABs)	**Sotrovimab**	In people aged 12 and over and >40kg who do not require oxygen and have an increased risk for progression to severe disease* **AND** they have a contraindication to using Nirmatrelvir with Ritonavir. For use within 5 days of onset of symptoms	Suitable for use in mild COVID-19 illness in primary care. Concentrate for infusion. Single intravenous dose.
	Tocilizumab	Adults requiring systemic corticosteroids and oxygen or mechanical ventilation	Not suitable for primary care use Concentrate for infusion.
	Tixagevimab plus Cilgavimab	Clinical and cost effectiveness is currently under review[17]. Guidance not expected until late 2023 at the earliest Some studies have suggested this nMAB combination can reduce infection i.e. act as pre-exposure prophylaxis. NICE has however reviewed and does not recommend for this indication[19].	Not recommended for use in any setting
	Casirivimab plus Imdevimab	It is highly uncertain that casirivimab plus imdevimab is effective against Omicron variants of COVID-19.	Not recommended for use in any setting.
	Baricitinib	Conditionally recommended (People 2 years and over): People needing oxygen, having oral corticosteroids, no other infection.	Not suitable for primary care use

* See table 2

There is no evidence to support the use of a combination of antivirals and nMABs. NICE NG191 however has recommended research in this area.

These approvals followed a review of a number of potentially beneficial anti-viral and nMAB treatments. Some that showed initial promise were not approved because new variants may escape susceptibility.[15] As a result, NICE has developed a system to quickly assess and review potential new medicines because COVID-19 variants in circulation change frequently.

Paxlovid and Xevudy are suitable for people with mild COVID-19 illness who do not need oxygen and are at high risk of progression. Xevudy use is restricted to those who cannot take Paxlovid.

Those with COVID-19 suitable for antivirals or nMABs are limited to those who i) have severe disease and are hospitalised and ii) those with mild disease and categorised as at risk of progression (Table 2).

Table 3 describes the current status, as described by NICE, of a number of antivirals and nMABs. Some have been approved for use in those not requiring hospital care and therefore have the potential to be prescribed and administered in primary and community care. However, they would require locally specific logistics e.g. where the delivery mode is intravenous, it requires daily visits or needs administration in a space suitable for resuscitation.

Table 4. Safety, adverse effects and inequalities for currently available and 'under review' novel therapies with potential for use in primary and community care

		Safety / potential adverse events	Inequalities
Antivirals	**Nirmatrelvir plus Ritonavir**	Diarrhoea, vomiting, dysgeusia (altered taste)	Large number of medicinal contraindications limiting its use in people with multiple drug requiring multimorbidity. Black, Asian and other minority ethnic groups are more likely to have renal and hepatic impairment for which this combination is contraindicated Not suitable in CYP The option of Sotrovimab as an alternative resolve some of this inequality
	Remdesivir	Self-reported and in order of frequency - nausea, headache, cough, diarrhea, dyspnea, fatigue, ageusia (loss of taste), anosmia (loss of smell), dizziness, chills, pyrexia, and COVID-19 pneumonia.	The intravenous mode of delivery for remdesivir could make it inaccessible to subgroups with lower socioeconomic status, mobility impaired, travellers, homeless, carers. Children and young people, those from a minority ethnic family background and pregnant were underrepresented in the main study that has informed this guidance.
	Molnupiravir	Insufficient safety and efficacy data in pregnancy and CYP	This drug has the potential to address health inequality arising from being housebound as it is oral and can be delivered to a household.
Neutralising monoclonal antibodies (nMABs)	**Sotrovimab**	Hypersensitivity reactions are the most common adverse effects. This includes, rash, contact dermatitis, bronchospasm. Administration will need to be in an environment where resuscitation after anaphylaxis could safely take place	NICE did not highlight any health inequality concern. Those unable to leave their home are unlikely to be suitable due to the logistics of providing a safe environment in case of hypersensitivity reaction.

Delivering greener kind respiratory care

Ensuring timely access to treatment for individuals at risk of exacerbation is crucial not only for a more sustainable approach to respiratory health but also for steering clear of unnecessary hospital admissions

Additional therapies for people hospitalised with COVID-19

Table 5. Other therapies for people hospitalised with COVID-19

	NICE Guidance	Relevance for primary care
Corticosteroids	Oral dexamethasone (hydrocortisone or prednisolone if unavailable) is recommended for people with hypoxia requiring supplemental oxygen.	A 10-day course usually prescribed and people may be completing a course after discharge from hospital or virtual ward. People with asthma or COPD requiring oral steroids for exacerbation should be given as usual even if they have co-existent COVID-19 illness.
Low molecular weight heparin (LMWH)	Nice recommends a standard prophylactic dose of LMWH as soon as possible, and within 14 hours of admission, to young people and adults with COVID-19 who need low-flow or high-flow oxygen, continuous positive airway pressure, non-invasive ventilation or invasive mechanical ventilation, and who do not have an increased bleeding risk.	Treatment should be continued for a minimum of 7 days and so may complete after discharge from hospital or virtual ward.

Therapies that are NOT recommended or recommended for use only as part of a trial to treat COVID-19

Table 6. Therapies that are NOT recommended or recommended for use only as part of a trial to treat COVID-19

	NICE Guidance	What this means for primary care
Antibiotics	Antibiotics should not be used for preventing or treating COVID-19 unless there is clinical suspicion of additional bacterial co-infection	People with asthma, COPD and other chronic respiratory disease that require antibiotics as part of their exacerbation management plan should continue as usual.
Anti-inflammatory antibiotics	Azithromycin and Doxycycline should not be used to treat COVID-19 illness.	People with COPD and other CRDs that require azithromycin or doxycycline, for their anti-inflammatory properties rather than antibacterial ones, as part of their prevention or exacerbation management plan should continue as usual.
Inhaled budesonide	Only use as part of a clinical trial	People with asthma and COPD will commonly be using budesonide. Their treatment plan should not be altered if they have co-existent COVID-19 illness
Colchicine	Colchicine should not be used to treat COVID-19 illness.	
Ivermectin	Do not use ivermectin to treat COVID-19 except as part of an ongoing clinical trial.	
Vitamin D	Do not use vitamin D to treat COVID-19 except as part of a clinical trial.	

Pathways for the management of COVID-19 Winter 2023/24

Each UK nation has a dedicated website that provides advice and signposting for further support. Each site has a page that describes the symptoms, whether free testing is an option and how to self-care. It also provides advice on when to get more help.

Each country has information about the availability of antivirals and provides more information about how to take it, side effects and common questions.

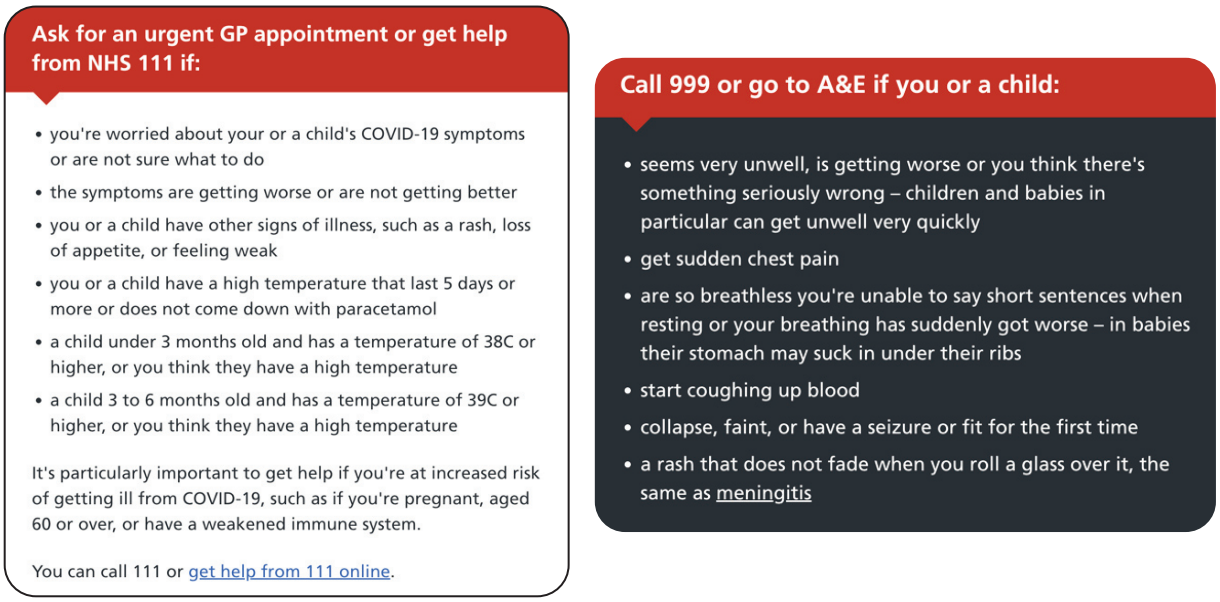
NHS England

https://www.nhs.uk/conditions/covid-19/treatments-for-covid-19/

NHS England currently lists availability as nirmatrelvir plus ritonavir (Paxlovid), sotrovimab (Xevudy), remdesivir (Veklury), molnupiravir (Lagevrio).

Anyone previously identified as high risk for severe disease by a clinician and who would be eligible for free COVID-19 tests, immunisations and potentially antiviral therapies who then tests positive is asked to contact 111, their GP, or a hospital specialist.

Figure 3. NHS advice about getting further help when unwell with COVID-19



Source: https://www.nhs.uk/conditions/covid-19/covid-19-symptoms-and-what-to-do/

The site also has links to each of England's integrated care boards (ICBs) and people who consider themselves eligible for antiviral therapy are advised to contact the ICB if their own health service provider has not already provided contacts and a pathway. This would not be an ideal pathway and people considered to be at risk for severe illness should be advised to have a plan in place.

In some areas,[20] antivirals are distributed centrally from Covid Medicine Delivery Units (CMDUs). If a patient's first contact is with primary care, they are referred to CMDU for delivery or collection.

HSC Northern Ireland

The same three antivirals and one nMAB available in England are also available in each of the five Health and Social Care (HSC) Trusts in Northern Ireland.

For people where there is coding in the HSC central record system suggesting eligibility for COVID-19 treatment, they should receive a text message, after reporting a positive test, that their local HSC Trust will be told and that medical staff will review their medical records. Those assessed as suitable for treatment will then be contacted to discuss further.

People who do not receive a text message about treatment but consider themselves eligible are asked to contact their GP practice.

NHS Scotland

The same three antivirals and one nMAB available in England and Northern Ireland are also available in Scotland. There is a contact phone number for all fourteen health boards for people to call if they are in a high-risk group and have a positive test. They may reach an answer phone when they call. People who fall ill when away from their home health board are advised to still call the number for the health board where they usually stay.

NHS Wales

NHS Wales currently lists availability as nirmatrelvir plus ritonavir (Paxlovid), sotrovimab (Xevudy), and molnupiravir (Lagevrio). Remdesivir (Veklury) is not approved.

The supply of treatments for COVID-19 in Wales for those not admitted to hospital, with a positive test is being co-ordinated by NHS 111 Wales and delivered at health board level. People who consider themselves eligible with a positive test are asked to use a self-referral portal.

The responsibility for the provision of COVID-19 therapies in the community has recently moved from the All Wales Information Service, National Antiviral Service (now decommissioned) to NHS 111. This means that information for healthcare can currently be situated in both places.

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Living with COPD

William Stubley, PCRS Patient Reference Group

Sixteen years ago I was diagnosed with COPD. My COPD means I get breathless very quickly now doing activities or things I previously did easily without and difficulty. Being as active as possible really helps me to manage my condition, so I have joined a gym for the first time as they have sessions purely for people with lung problems. Attending these sessions weekly has resulted in me being able to control the periods of breathlessness. More recently, I have joined a singing group for people with lung problems and this helps to strengthen the muscles I use to breathe and help regulate my breathing.

My experience with healthcare professionals has been positive with regards to my treatments and inhalers. I have been made aware of the various options available to manage my COPD and how they should be used to maximize their benefits. Currently, my treatment plan is helping me reduce the impact my condition has on me and live a relatively normal life.

I do believe that it is worthwhile for healthcare practitioners to stress to their patients, that COPD is not the end of the road and that its effects can be managed if treatments, rehabilitation and advice are proactively engaged with and applied. Patients need their healthcare practitioners to show them what is available; the diagnosis of this condition is a shock and seems overwhelmingly life-changing.

healthcare practitioners need to keep themselves up to date with what treatments and rehabilitation is available for patients outside the surgery and beyond traditional medical healthcare. People with COPD can join gyms and exercise classes aimed at managing their condition and they can still live their lives and live actively. People with COPD can still do the things they enjoy, such as gardening and playing football or cricket with their grandchildren.

Read more on PCRS Top Tips for encouraging activity as a gateway to good respiratory health or see https://qrco.de/bboObi

Watch our on-demand webinar in which Steve Holmes, Carol Stonham and Darush Attar-Zadeh explore who we can challenge the old negative perceptions of COPD and show how lives can be transformed with the right advice – see https://qrco.de/bdOunM

PCRS News round-up

CONFERENCE

What a conference it was. The 2023 conference proved to be our biggest conference ever in the history of PCRS with over 500 attendees. With five parallel streams of content covering clinical, service development, compassionate leadership, workshops and research there really was a fabulous programme. We are extremely grateful to all our speakers, the faculty and the conference organising committee for all their hard work in delivering such a great event.

Thanks also to the sponsors and exhibitors who help to make the conference possible. The feedback has been fantastic and we are working hard to build on that success and meet those expectations. Look out for registration opening at the beginning of February 2024.

RESPIRATORY LEADERS

In 2023 we returned to a face to face 2-day event with additional leadership content threaded through the PCRS conference and a follow-up webinar in November. Feedback from the programme has been excellent and subject to funding we aim to deliver a similar programme again in 2024. The programme led by PCRS leaders and expert facilitator Catherine Blackaby represents a huge investment in participants and over the years has supported many PCRS well known faces including our Executive chair, Katherine Hickman. Do encourage your colleagues to sign up it is a fantastic opportunity. Find out more at https://www.pcrs-uk.org/respiratory-leadership-programme.

COMMITTEE NEWS

Since our last issue of Primary Care Respiratory Update we have have welcomed two new committee members to the conference organising committee Stephen Foster and Sara Haq have already dived in and are working with the committee to develop the 2024 conference programme. We are also delighted to welcome Aaron Foulds and Emma Thompson onto our patient reference group (PRG) – our PRG play a vital role in ensuring we always consider the patient perspective in the work that we do. You can read Aaron and Emma's biographies on the following pages to learn about their experiences as people with respiratory disease. If you are interested in getting more involved with the organisation why not consider applying for one of our committees in 2024.

HAVE YOU COMPLETED OUR ONLINE LEARNING MODULE ON DELIVERING GREENER, KINDER RESPIRATORY CARE?

Members can access modules directly through their member dashboard. Each module features some short text to read, a short video which is followed by a series of short multiple-choice questions. Members who complete the modules will receive a handout and certificate for inclusion in their professional portfolio. Over the course of time, we plan to build on these learning modules to support healthcare professionals, irrespective of profession to learn and develop their respiratory knowledge. To access your dashboard, simply login to the PCRS website

PCRS PODCASTS AND ON DEMAND WEBINARS

PCRS has a huge range of podcasts and on-demand webinars available to members. Covering a wide range of topics these resources offer a great way to update learning on-the-go. In 2024 we plan to expand our podcast range with frequent podcasts and we'll be introducing a regular coffee and debate webinar to allow members to put questions to our experts on a respiratory issue they would like help with. Login to the website and use the search bar to find your topic of interest to see what webinars and podcasts are available.

PCRS ASTHMA

Earlier this year, in the absence of updated guidance, PCRS developed an infographic to provide guidance on the management of asthma in adults and children over 12 years of age. The guidance, based on the GINA approach to managing asthma, includes a two-page simple infographic which is easy to follow and implement in primary care. You can access this guidance. Use the QR code to access the guidance.

PATIENT REFERENCE GROUP NEW MEMBERS

Aaron Foulds

Aaron is a severe asthmatic who is a keen patient advocate.

Aaron has been on Asthma UK' Lay Advisory Panel before and during the Pandemic and has been a citizen scientist with The Rapid Eczema Trials. He has also has been a patient representative on the Bradford and Craven NHS Digital Integration Board.

Aaron has presented to trainee GPs on the mental health effects on severe asthma.

Emma Thompson

Emma Thompson joined the PCRS Patient Reference Group in July 2023.

A severe, brittle asthmatic, Emma is motivated to use her experiences (both positive and negative) to help change the narrative for others with lung conditions.

Emma worked as a patient voice on the highly successful Accelerated Access Collaborative, Rapid Uptake Programme in improving asthma diagnosis and outcomes through increased access to FeNO testing in PCNs throughout England.

Using this experience, Emma currently sits on the Clinical Policy Board for Respiratory as well as the Asthma + Lung UK Expert Patient Panel and is looking forward to new challenges and opportunities with the PCRS.

Emma lives in Wiltshire with her husband and 2 children and in her spare time, enjoys playing the piano, cooking and completing jigsaw puzzles.

Obituary

Dr Iain Small

Chair of the Primary Care Respiratory Society 2008 – 2013

Born 11/2/1961 Died 20/06/2023

WRITTEN BY

Steve Holmes, Christine Small, Lorna Small

Iain was a major contributor to PCRS for over 20 years and was known to many in the PCRS family, as well as the wider respiratory world – a previous chair of PCRS, chair of the education committee and editor of the Primary Care Respiratory Update, he will be sadly missed in our organisation. He was awarded life membership of PCRS in 2014.

Iain was born into a medical family in Irvine, Ayrshire. His father would soon go on to become Director of Public Health in the Tayside. He went to medical school in Dundee and moved smoothly into general practice (at a time when training posts were incredibly competitive, and often partnerships had more than 100 applicants). Following his training, he served as a general practitioner for over 30 years in Peterhead - a town that he loved. He worked through the times of long hours, working over weekends on top of the normal working week. He helped to support medical services in a local prison, was the medic for Peterhead FC for more than 20 years, and in keeping with the more urban nature of his practice supported a local emergency department over many years. He was a general practice trainer for much of his career – and trained and inspired many GP colleagues during this time. His work was recognised in his faculty of the Royal College of General Practitioners when he was awarded the NE Faculty Provost Medal in 2022 for his contribution to general practice. He was also awarded Fellowship of the RCGP for his work.

Iain was also a stalwart of the Peterhead pantomime (helping to direct, create scene sets, taking roles as the villain or pantomime dame at times over many years – indeed Iain was helping support this years' pantomime as a writer and director). Iain also supported his locality with the Rock Challenge helping disadvantaged school children again to be involved in the performing arts. Peterhead managed to develop a national presence in this role. Iain was recognised in 2018 as the 'Best of Buchan' - an outstanding life time achievement award in Peterhead awarded for his commitment to the town.

Iain married Christine, currently still a General Practice Nurse working in the same practice in Peterhead, in 1981 during medical student days. They have four wonderful children Stewart, Lorna, Claire and Alison, and as Iain described it he was 'papa' to four grandchildren (Oliver, Eleanor, Hannah and Nathan). They holidayed regularly initially in their caravan and on a number of trips to Disney World in Florida as a special family treat. Those of us who were privileged to know Iain often heard lovely positive tales of his work in Peterhead, his wonderful wife and family and their holidays and activities.

Within PCRS, Iain joined the Executive Committee in 2002 at a time when it was called the General Practice Airways Gro up. He took over chair of the education committee in 2005 – 2008 and became chair of PCRS between 2008 – 2013. Iain's first meeting as chair involved the name change to the Primary Care Respiratory Society and he was passionate about good quality care – and multi-professional team working throughout his career. He remained on the committee until 2021, more latterly in his role as editor of the Primary Care Respiratory Update.

He worked tirelessly promoting PCRS, promoting integrated care and leading the organisation as chair – but supporting thereafter. He published widely with a mix of research, guidance (including the BTS / SIGN asthma guideline for a period of time and a seminal paper on spirometry in primary care in 2007) as well as opinion pieces.

Iain was a brilliant speaker and educator – informing and inspiring colleagues at many of our conferences, as well as working with groups of educators in other environments (including being a pivotal part of the UK wide Future Forum and Network meetings for 20 years). He was well known and respected by many primary care and specialist colleagues nationally and globally – and had the ability to challenge in a positive creative way. Iain attended most PCRS conferences over the last 20 years and was regularly part of the Winter BTS and European Respiratory Society meetings. He was a friend to many colleagues across boundaries and always had time to listen, talk and share ideas.

Iain adapted the Donald Schon "swamp where the work goes on… and ivory towers of academia" regularly when talking about the "great unwashed" – the many clinicians across boundaries who did not have the same passion for respiratory as specialists did – and this analogy helped at many times to understand the needs of a generalist clinician compared to a clinician who is orientated to one disease or organ.

He was a talented musician and entertainer; he was a skilled water colourist who created amazing landscapes that were as good as many professionals, and as recently as 2014, was running marathons for Asthma UK – and doing charity work for the British Lung Foundation (biking 150 miles over three days for charity). He was a trustee for Asthma UK in the past and worked as a Medical Director in Grampian during the pandemic helping to develop and lead the rapidly changing demands of services in that area during COVID19.

All of this was completed while following Andy Murray to Wimbledon, Glasgow, Birmingham and even Malaga to shout his support, playing at least one round of 18 holes a week at Cruden Bay Golf course with one of his many companions, and 'virtually' completing a number of walking challenges with Christine – including Lands End to John O'Groats.

For the many of us who knew Iain he will be sadly missed for his leadership, passion, humour and drive. Iain had a gentle supportive sense of humour (and was proud to be Scottish, enjoying gentle jibes at those of us south of the border if we forgot the wider UK picture). He also challenged positively any narrow viewpoints - no matter who expressed this, nor their global stature. He genuinely cared for clinicians across boundaries, for educating and for improving respiratory care – as he did care for his family and friends.

We will miss Iain but must thank him for his inspirational support for PCRS over time and for his humour and wisdom.

Acknowledgements:
It is important to recognise the contribution of Donna Caslin, Stephen Gaduzo, Anne-Marie Marley, Ruth McArthur, Vinty McGovern, June Roberts, Jane Scullion who worked regularly with Iain on the Network and Future Forum faculty and discussions helped to produce this document, along with John Haughney.

Our Shared Purpose

We share

- A collective passion to offer the best care to people with respiratory conditions; influenced and delivered by trained, experienced, compassionate and holistic staff.
- A commitment to always put the respiratory patient at the centre of everything we do.
- A desire to be supportive of each other, to care for our members' wellbeing, encouraging individual growth and a passion to constantly improve (put on your own oxygen mask first).
- A family-like togetherness creating a sense of belonging, with a common aim to improve respiratory health and all the elements that link to it - early and accurate diagnosis, improved management and support for patients.
- A dedication to challenge inequities resulting in increased prevalence and variation in provision of care.
- A hunger to challenge the status-quo and the 'poor cousin' status of respiratory health versus other conditions (e.g. cardiac, cancers, etc) and how they interact with each other.
- A drive to be sufficiently discerning to not settle for hollow promises - actions speaks louder than words.

Why we exist

- We are driven by our desire to improve the health of respiratory patients.
- We aim to provide support, information-sharing, learning and skill-improvement for all those involved in the care for people with respiratory conditions.
- We strive to empower colleagues, bring them together, inform and support education and professional development.
- We strive to improve and maintain appropriate service provision across boundaries for people with respiratory disease.

Join PCRS

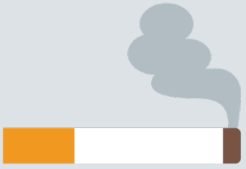
Scan the QR code to become part of the UK's largest network of dedicated respiratory professionals working in primary, community and integrated care settings.

We're grateful to our corporate supporters for their financial support which supports the core activities of the Charity and allows PCRS to make its services either freely available or at greatly reduced rates to its members. See PCRS' statement on pharmaceutical funding https://qrco.de/PCRSpapers

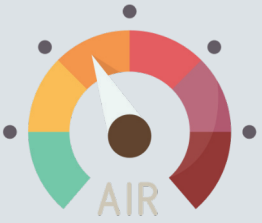
Health inequalities

Health inequalities are an exacerbating factor for respiratory conditions and negatively affect patient outcomes.

Incidence and mortality rates from respiratory disease are higher in disadvantaged groups and areas of social deprivation.



Higher smoking rates



Higher levels of air pollution

Poorer housing quality

Populations that work in industries with greater exposure to hazards

Contributing factors to lung disease

PCRS aims to raise awareness and offers practical resources to help healthcare professionals mitigate the impact of health inequalities.

- People experiencing homelessness video
- Exploring the ethics and inequalities of digital technology webinar
- Language analysis map - insights for your local area

Learn more and access PCRS resources

SCAN ME!

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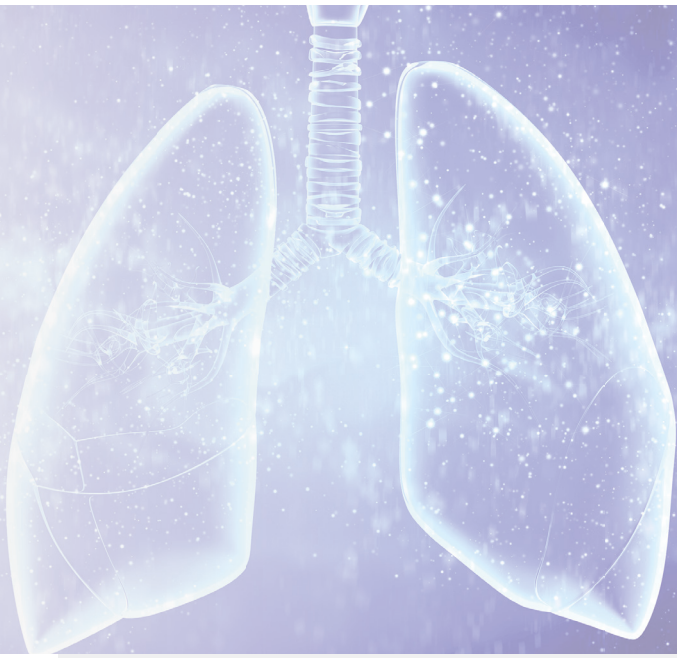

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- Epidemiology
- Prevention
- Clinical care
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