Primary Care Respiratory Update

Spring 2023 Issue 26

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

Special edition - Focus on Asthma

Diagnosis of asthma

The GINA approach to managing asthma

Conducting an asthma review in 10 minutes

FeNO testing in primary care

Caring for patients with asthma receiving biologic therapy

Primary Care Respiratory Society

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1 NICE guideline [NG80] for Asthma: diagnosis, monitoring and chronic asthma management. Mar 2021

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Primary Care Respiratory Update

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0040030013 v 1.0 | Date of preparation: March 2023

References:
1. Acepiro Summary of Product Characteristics. Available at https://www.medicines.org.uk/emc/product/13849/. Date accessed March 2023
2. British National Formulary available at https://bnf.nice.org.uk/drugs/acetylcysteine. Date accessed March 2023
3. NHS England and Wales Drug Tariff March 2023 available at https://www.drugtariff.nhsbsa.nhs.uk/#/00834576-DD_1/DD00834564/Home. Date accessed March 2023

Primary Care Respiratory Update

Contents

Are you prepared for hay fever season?

PODCAST

One Airway, One Disease

Tune in to our three-part series to explore the concept of one airway, one disease, hear about the differential diagnosis of allergic rhinitis and learn more about treatment and real-life application.

HEAR FROM
Steve Holmes
Frances Barrett

GUIDE

Allergic Rhinitis: A common problem, not to be sneezed at!

Read our 'Getting the Basics Right' article on the diagnosis and management of allergic rhinitis. Featuring a useful pollen chart and five top tips for diagnosing and treating rhinitis.

BY
Carol Stonham

VIDEO

One airway: if they're wheezing, are they sneezing?

Watch our 2020 PCRS Conference video, which highlights the links between upper and lower airways. The presentation features three patient case studies to guide learning on this topic.

FEATURING
Glenis Scadding

Allergic rhinitis resources

Visit the PCRS website to access our guides, videos and podcasts on demand.

PCRS is grateful to Glenmark Pharmaceuticals Europe Limited for the provision of a grant for the One Airway, One Disease podcast series. The grant funder has had no input into the content.

Guest Editors Update - Focus on asthma

Katherine Hickman, *PCRS Executive Chair*

This spring, *Primary Care Respiratory Update* comes to you with a new focus on asthma. We'll be bringing you pragmatic and succinct information that you can adopt in your practice to support early diagnosis, improved management, reduced reliance on short-acting bronchodilator inhalers and advice on managing patients with severe asthma.

Earlier this year, the Medicines and Healthcare Products Regulatory Agency (MHRA), for the first time, approved the use of a dual (ICS/Formoterol) combination treatment to be used as a reliever therapy for people aged 12 and over with the therapy choice situated early in the asthma treatment pathway as an alternative to its current use as a preventer or MART therapy sitting later in traditional treatment pathways.[1]

In the UK, this new therapy option does not yet sit within an approved national guideline as NICE last updated its treatment pathway in 2020.[2] While we await a new joint NICE/BTS/SIGN national asthma guideline, PCRS has looked to the latest Global Initiative for Asthma (GINA) approach to asthma treatment to see how this new treatment option fits and we have developed a simple algorithm for healthcare practitioners.[3]

Whilst we would all like to be able to dedicate at least 30 minutes for an asthma review, as healthcare professionals working under immense pressure, many of us are not afforded this luxury and we're having to squeeze in asthma reviews in a much shorter timeframe. This issue of *PCRU* includes a practical guide to delivering an asthma review in just 10 minutes. We're also including some feedback from three patients one of whom describes their asthma review which is conducted solely by an online form – not something recommended by PCRS.

We'd love to hear your experiences of how you deliver your asthma reviews and if you have an example of good practice please share it with us or even consider submitting an abstract for our conference. If you're not confident about submitting an abstract check out our video on how to submit an abstract available at https://www.pcrs-uk.org/conference/abstracts

Finally, I'd like to remind anyone reading this to register for and join us at our national conference in September (21st – 23rd). With five parallel streams of content featuring clinical, research, service delivery, compassionate leadership and practical sessions there's definitely plenty of learning to be had and all within the welcoming arms of the PCRS family – we're a friendly and inclusive bunch whether you are starting out or a respiratory leader. So join us for our best conference ever and help us to spread respiratory best practices across primary care, community care, integrated care and beyond. Register before 30 June for your chance for early bird rates. Limited numbers of travel bursaries are also available. Find out more at https://www.pcrs-uk.org/conference.

References

1. Medicines regulator approves UK's first dual combination inhaler for mild asthma. The Pharmaceutical Journal https://pharmaceutical-journal.com/article/news/medicines-regulator-approves-uks-first-dual-combination-inhaler-for-mild-asthma (2023).
2. NICE. NICE guideline [NG80] Asthma: diagnosis, monitoring and chronic asthma management. Published date: 29 November 2017 Last updated: 12 February 2020 https://www.nice.org.uk/guidance/ng80.
3. GINA. GINA-2022-Pocket-Guide-WMS. Global Initiative for Asthma 1–50 https://ginasthma.org/wp-content/uploads/2022/07/GINA-2022-Pocket-Guide-WMS.pdf (2022).

Join our Respiratory Leadership Programme

The PCRS Respiratory Leadership Programme gives you the tools and knowledge to take your passion for respiratory care and to use it to drive forward positive change in your practice.

Supportive

Make new connections and overcome workplace isolation. Learn in a safe environment and be equipped to set up your own network of peer support.

Relevant

Framed in respiratory practice, this course will help you to navigate the changing language and infrastructure of primary care.

Confidence building

Grow your confidence, feel empowered to use your voice and tackle imposter syndrome.

Rewarding

Get clarity and direction on the change you want to make and the tools to make it happen.

This hybrid course comprises a mix of face-to-face and online learning, with structured sessions and on-demand resources to fit around your busy workload.

Scan to register

Available to PCRS members only - if you're not a member, you can join now. The PCRS Conference is an integral part of this year's respiratory leadership programme, and participants are required to attend - a discounted registration rate is available.

We are grateful to Chiesi for providing sponsorship for the PCRS Respiratory Leadership Programme. The sponsor has had no input into the content of the programme.

Features and diagnosis of asthma

Darush Attar-Zadeh,[1] Ren Lawlor,[2] Katherine Hickman

[1]PCRS Conference Organising Committee Lead and Pharmacist (Medicines Optimisation); [2]PCRS Vice Chair and Education Lead; [3]Chair PCRS Executive, GP Partner, Bradford and Respiratory Lead for West Yorkshire Health and Care Partnership;

Asthma is a long-term condition characterised for the vast majority by trigger-induced eosinophilic airway inflammation resulting in wheeze, breathlessness, cough, and chest tightness.

In 2022, using the available Quality and Outcomes Framework (QOF) data from UK general practice registers, 6.5%, or 3,745,077 people over the age of six, were diagnosed with asthma.[1] The vast majority of asthma care occurs in general practice.

Before embarking on any treatment for asthma, it is essential to ensure that you, as the prescriber, can describe to the person with asthma:

- the criteria by which they have been given the diagnosis of asthma.
- what can be done about it?
- what might happen if nothing is done about it.

Supporting people to be adherent to asthma medicines is a key part of asthma management. Providing understanding about why the diagnosis has been made by showing how they have fulfilled the diagnostic criteria set out in Figure 1 and why any recommended treatment might help, provides a firm foundation with which to explore choices about medicinal therapies. Even if you are not the person making the diagnosis, for any change in asthma therapy, it is important to look back and check how the asthma diagnosis was justified and that the evidence still stacks up.

The PCRS consensus on Asthma Guidelines in Practice (scan QR code to view) includes a practical and pragmatic guide that helps primary care navigate the differing and sometimes contentious approaches to diagnosing asthma.[2] It looks to the last updated national guidelines from BTS/SIGN[3] 2019 and NICE in 2020[4] and offers a structured way forward for now. In 2024, we anticipate a new pathway agreed upon by all three parties (BTS/SIGN/NICE).

Structured history taking and gathering of information over time in response to possible triggers and trials of treatment is critical. With this process comes an important message to give at the outset to someone suspected of having asthma, which is that the diagnosis can take time to confirm. Firstly, it is important to rule out other causes of asthma symptoms. Table 1 reminds us of the alternative diagnoses to consider.

If the features of asthma are not strongly featuring after initial assessment or there is a possibility of an alternative diagnosis, then a 'Low Probability' of asthma should be concluded and further tests or referral should take place.

If the presenting features of asthma are confirmed and the process to exclude other conditions is completed, then objective measures to increase the confidence in a correct diagnosis of asthma should be performed. These tests mainly include recording objective airflow measurements, ranging from peak expiratory flow readings, microspirometry, full spirometry, and Fractional Exhaled NO (FeNO). The PCRS consensus has considered the guidance from both national guidelines and suggests an

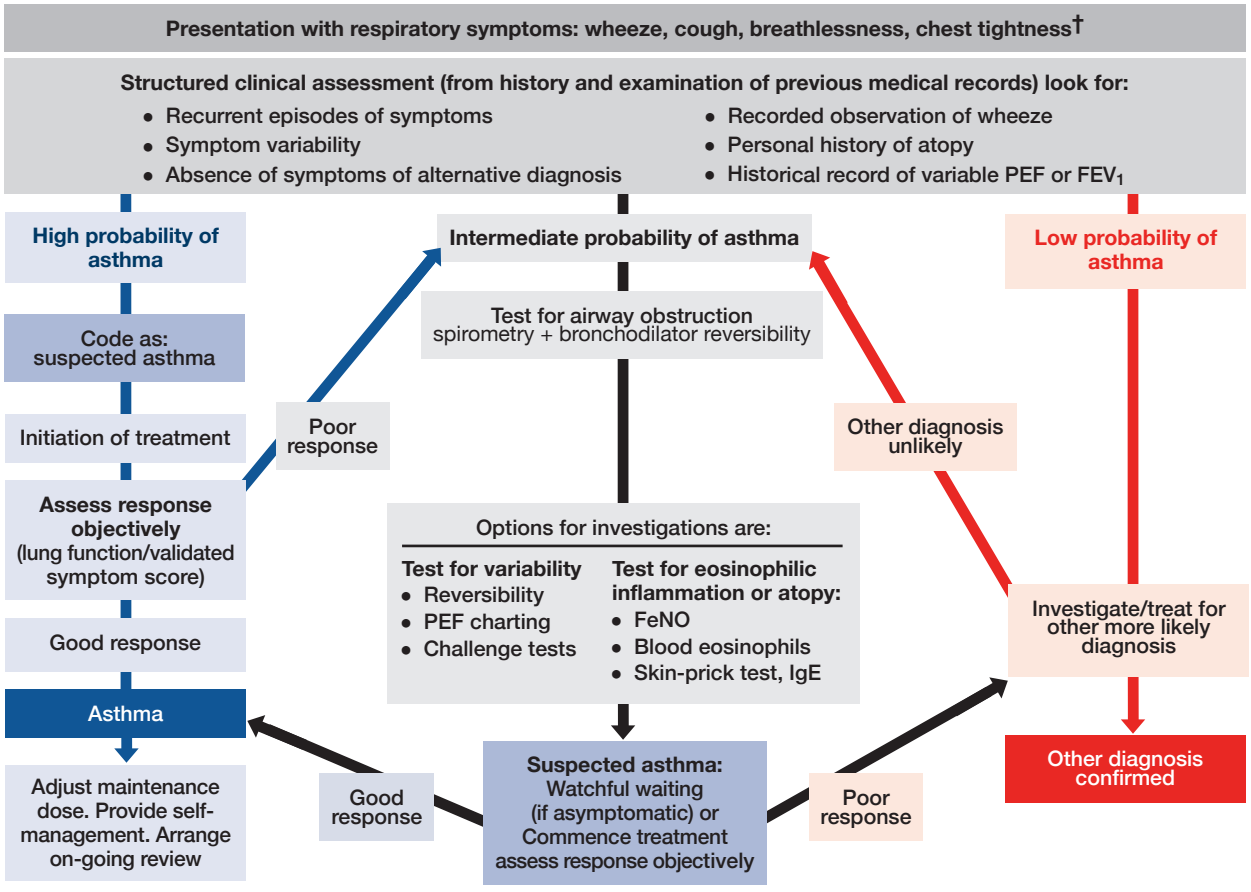
Table 1: Clinical features to suggest an alternative diagnosis to asthma in adults

Clinical clue	Possible diagnosis
No airflow obstruction	
Predominant cough with no lung function abnormality	Chronic cough syndromes; pertussis
Prominent dizziness, light-headedness or peripheral tingling	Dysfunctional breathing
Recurrent severe 'asthma attacks' without objective evidence to confirm	Vocal cord dysfunction
Predominant nasal symptoms without lung function abnormality	Rhinitis
Postural and food-related symptoms, predominant cough	Gastro-oesophageal reflux disease
Orthopnoea, paroxysmal nocturnal dyspnoea, peripheral oedema, pre-existing cardiac disease	Cardiac failure
Crackles on auscultation	Pulmonary fibrosis
With airflow obstruction	
Significant smoking history (ie, over 30 pack-years), age of onset over 35 years	COPD
Chronic productive cough in the absence of wheeze or breathlessness	Bronchiectasis*, inhaled foreign body*, obliterative bronchiolitis, large airway stenosis
New onset in smoker, systemic symptoms, weight loss, haemoptysis	Lung cancer*, sarcoidosis*

*May also be associated with non-obstructive spirometry.

This table is reproduced from SIGN 158 (British guideline on the management of asthma) by kind permission of the Scottish Intercollegiate Guidelines Network[2]

Figure 1. Diagnostic algorithm for individuals presenting with symptoms suggestive of asthma



† In children under 5 years and others unable to undertake spirometry in whom there is a high or intermediate probability of asthma, the options are monitored initiation of treatment or watchful waiting according to the assessed probability of asthma

This figure is reproduced from SIGN 158 (British guideline on the management of asthma) by kind permission of the Scottish Intercollegiate Guidelines Network[2]

approach based on availability and access to these tests as well as whether the clinical suspicion falls into a high or intermediate probability.

Choosing to follow the PCRS consensus to diagnose asthma is also a greener choice. Whilst selecting the greenest inhaler device is important, if the diagnosis is wrong or the patient remains underconfident about their diagnosis, then any prescribed inhaler will be a loss for the environment if it doesn't relieve symptoms or get used.

References
1. NHS UK GP QOF Contract Database. 2022 http://www.gpcontract.co.uk.
2. Keeley, D. & Baxter, N. Conflicting asthma guidelines cause confusion in primary care. BMJ k29 (2018) doi:10.1136/bmj.k29.
3. BTS_SIGN Guideline for the management of asthma 2019 https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/.
4. NICE. NICE guideline [NG80] Asthma: diagnosis, monitoring and chronic asthma management. Published date: 29 November 2017 Last updated: 12 February 2020 https://www.nice.org.uk/guidance/ng80.

Support from your peers

A local network is the ideal way to bring colleagues in your area together, to share best practice, hear the latest news and access peer support.

Peer support networks

Whether you are a practice nurse or locality lead, being responsible for improving respiratory care for patients can be daunting and frustrating, especially when juggling workloads and trying to keep up-to-date with the latest developments.

- Meet like minded health care professionals working in the delivery of respiratory care
- Share questions, insights and support
- Catch up on the latest best practice
- Overcome the isolation of working in primary care

Find your local group

There are around 40 local groups that are affiliated to PCRS - find your nearest affiliated peer support network via our online directory.

Can't find a group that's local to you or would you like to run your own group?

Become a peer support group leader and affiliate your group to PCRS and we can provide you with training, support and a range of resources to ensure your group runs smoothly.

PCRS is grateful to Simpson Millar for their support of the Peer Support Network programme. The programme has been solely organised by PCRS.

Peak flow monitoring and microspirometry as aids to respiratory diagnosis in primary care

Introduction

The common chronic respiratory disorders diagnosed in primary care—asthma and chronic obstructive pulmonary disease (COPD)—are both characterised by airway obstruction. In asthma, this varies markedly with time and treatment, while in COPD, the airway obstruction is typically fixed and permanent. Some people have fixed obstruction with some degree of reversibility—the so-called asthma COPD overlap syndrome (ACOS).

Diagnosis involves careful history-taking and examination before moving on to physiological testing, being careful to keep in mind other respiratory and non-respiratory diagnoses that may cause breathlessness or cough. The pattern of symptoms over time and their response to treatment are also important, and earlier diagnoses should be re-interrogated if necessary. Always review an initial diagnosis and consider referral to a specialist if the response to treatment is poor or there are atypical features. Chronic sputum production, for example, is highly unusual in asthma and even in COPD should prompt consideration of bronchiectasis. Get a chest X-ray at the time of any new diagnosis of COPD, and if a suspected asthma case also has any atypical features.

Peak flow charting and microspirometry are inexpensive, easy-to-use, and provide useful information when assessing respiratory symptoms. They are, however, generally undervalued in guidelines and underused in primary care. The COVID pandemic, of course, made us question the safety of aerosol-producing tests such as spirometry, microspirometry, and peak flow testing. The use of spirometry, in particular, has plummeted. Recent evidence shows us that full spirometry is nowhere near returning to pre-pandemic levels, and the need to urgently resume services was highlighted in the UK's Health Service Journal in March 2023.[1]

With access to more formal respiratory function testing taking time to recover, it is still essential that when diagnosing asthma and COPD, we should always seek objective physiological confirmation of our diagnosis. This is where PEFR and microspirometry can be helpful.

Because of the potential to generate aerosols that can carry infection, many practitioners have, during the course of the pandemic, developed processes and methods for remote teaching of technique and assessment of results, both made eminently possible by the rapid advances seen in both the availability and the use of digital technologies. Video tutorials on using peak flow meters and microspirometers abound online, and patients can be directed to these; some practitioners have made their own for their patients.

This article will cover the use of peak flow monitoring and microspirometry in primary care as aids to the objective demonstration of airway obstruction, reversible or otherwise.

Images of a traditional peak flow meter (adult and mini) and a digital peak flow meter

Peak Flow Monitoring

The great advantages of peak flow measurement in asthma diagnosis are the low cost and ready availability of the equipment, as well as the ease with which peak flow measurement and periods of peak flow monitoring can be repeated. Measurements can and should start at once if a patient presents with acute symptoms. Demonstrating to yourself and a patient during an acute airway event that a peak flow reading can dramatically change with treatment can be very powerful in engaging future use of the peak flow meter and providing confidence in any diagnosis of reversible airway disease.

Repeated measurements and charting of peak expiratory flow have long been used for the diagnosis of asthma. Like many long-established and simple aids to diagnosis, the published evidence base for its use is surprisingly sparse. The latest NICE asthma guideline[2] cites a generally low and variable sensitivity, but it has a specificity of up to 0.99 in adults and 0.80 in children for peak flow monitoring in the diagnosis of asthma. This high specificity value does mean that if you have clear evidence of peak flow variability, you can be confident in this test for ruling asthma in as a diagnosis.

We know that sensitivity (the ability of a normal peak expiratory flow rate (PEFR) chart to rule out asthma) also improves if the monitoring is repeated, particularly if it can be recorded during times when people are experiencing symptoms.

Who should do this?

Setting up peak flow monitoring with a patient suspected of having asthma requires the healthcare professional to have the skills and the time to do it. Just like the correct use of an inhaler, teaching the correct use of a peak flow meter is not like falling off a log, and a surprising number of healthcare professionals don't know how to do it. Learn! It is not rocket science, either. Explaining and teaching effective peak flow monitoring does take a bit of time, but attention to correct diagnosis at the outset saves a great deal of time down the line. If there is not time to do the job at the first consultation, arrange for a review as soon as possible to go over it more thoroughly, but always get at least one peak flow and give them a meter and a chart before starting any treatment.

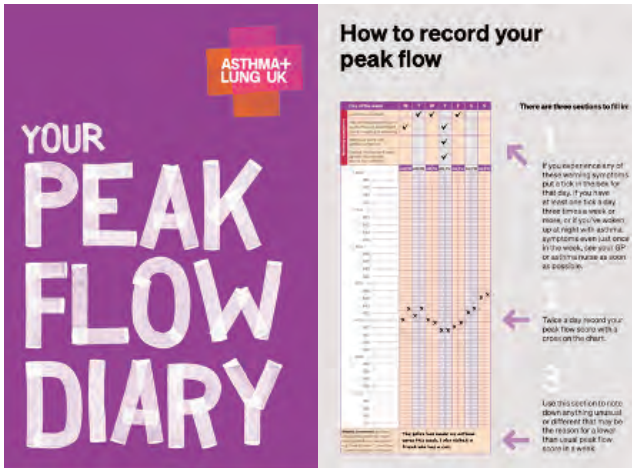
How to do it

Effective peak flow monitoring for diagnosis depends on:

1. Explaining to the patient or parent how valuable a period of peak flow monitoring is in helping to make a correct diagnosis. "This is a bit of a fuss, but it will really help us to get the right diagnosis, get you onto the right treatment, and make you better."
2. Correct teaching of how to use the peak flow meter. Best of three hard, fast blows and record the highest reading.
3. Having the patient or parent show you that they can perform peak flow measurements, correctly read the meter, and correctly plot that number on a chart. They must be able to do all three to make a meaningful peak flow chart.
4. Taking measurements twice daily, or more, for a sufficient period—usually at least 2-4 weeks—at a time when symptoms are present. Peak flow charting when introducing a trial of treatment is particularly worthwhile. Encourage measurement when symptoms are marked and when they are better. Pre- and post-exercise readings are also useful.
5. Knowing how to identify abnormal variability in peak flow.
6. Repeating the testing period at a later date if symptoms persist but initial testing is inconclusive or the diagnosis remains in doubt.

Peak expiratory flow (PEF) should be recorded as the best of three forced expiratory blows from total lung capacity with a maximum pause of two seconds before blowing. The patient can be standing or sitting. Further blows should be done if the largest two PEF are not within 40 l/min.

Charts are often provided with peak flow meters, but these are limited in duration. Asthma + Lung UK has an excellent web page that can support any discussions you have in the consultation, and a peak flow chart can be downloaded.

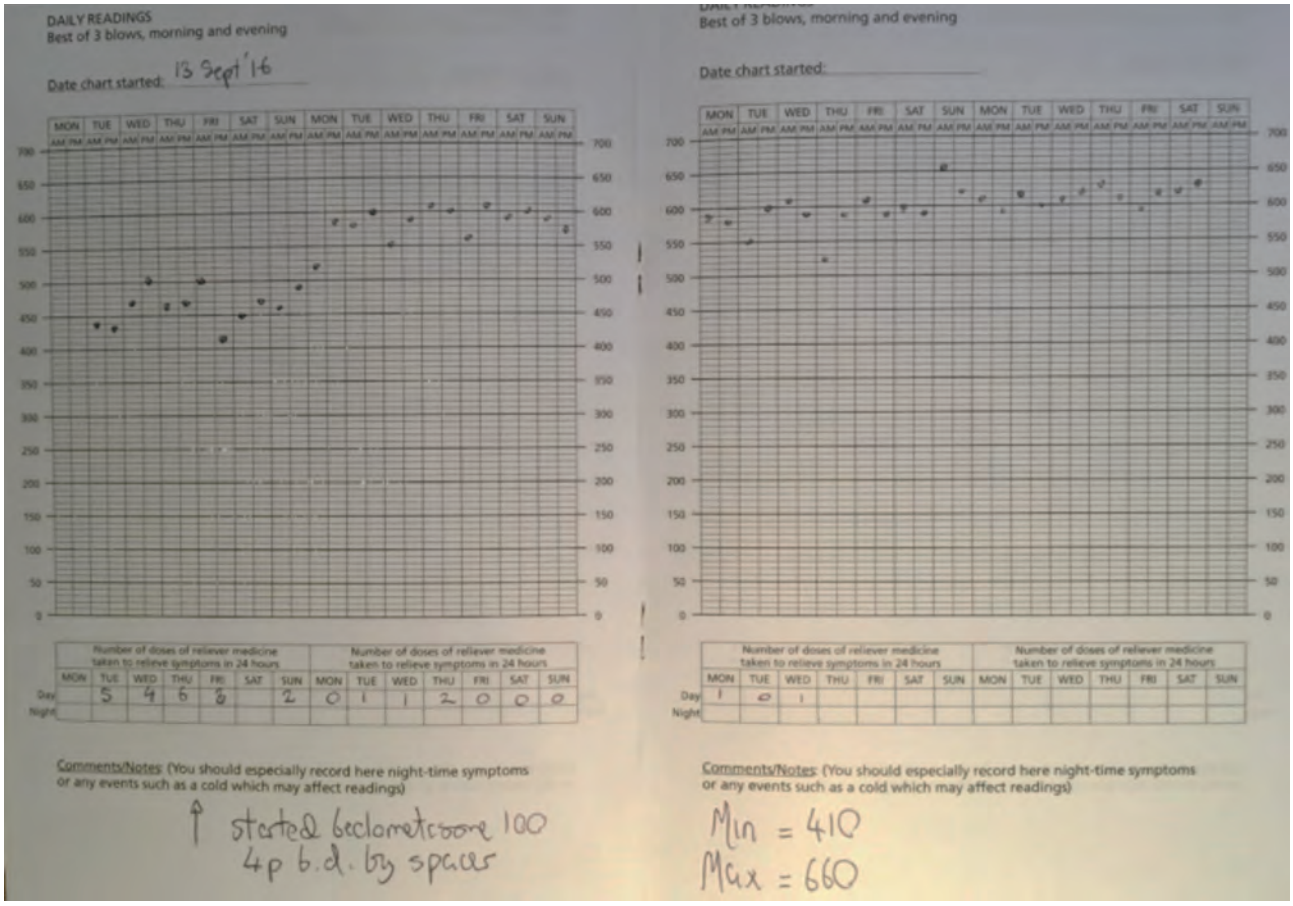


Asthma + UK peak flow diary that can be downloaded

Charting the readings on a graph is much preferable to just recording numbers since it allows better pattern recognition and easier identification of maximum and minimum readings. Digital applications and PEFR device attachments for smartphones to help record and chart results are becoming more available.

The age at which children become able to do reliable peak flow measurements cannot be easily defined. Most children aged 7 years and over will be able to perform meaningful peak flow measurements. Children should be prescribed a low-range peak flow meter.

For a patient with a suspected acute asthma attack that you are planning to treat with bronchodilators and/or oral corticosteroids, always measure peak flow before and after



Two-week peak flow tracing consistent with a diagnosis of asthma: a picture is worth a thousand words

treatment; this is good practice in any case as part of the assessment of the severity of the attack and may afterwards provide strong supportive evidence for an asthma diagnosis.

It is sometimes said that the accuracy of peak flow charting is poor. This can be mitigated by ensuring the method, purpose, and value of the charting are clearly explained and that it is made clear that charting does not need to continue once the diagnosis is made.

What is abnormal peak flow variability?

There are a variety of numerical definitions. Like blood pressure and blood glucose, peak flow variability is a continuous physiological variable, and cut-off points are arbitrary. One commonly used definition in guidelines is the difference between maximum and minimum expressed as a percentage of the mean peak flow, with more than 20% being considered abnormal. If the max-min difference is greater than 20% of the maximum reading (easier to find than the mean), then this is clearly abnormal.

As helpful as the numbers are, so is the pattern appearance of the graph. The most typical picture is of low readings with obvious saw tooth variability flattening out and rising as symptoms respond with time or treatment.

The illustration above shows the peak flow chart of a 55-year-old never-smoker with a one-year history of recurrent worsening cough and shortness of breath. His chest X-ray was normal. His symptoms had greatly improved with a one-week course of prednisolone but recurred when the steroids were stopped. The chart was done as he started on twice-daily inhaled corticosteroids with a spacer. It provides convincing objective evidence of significant peak flow variability, coinciding with the resolution of his symptoms. This is strongly supportive of an asthma diagnosis.

Remember occupational asthma

The possibility of occupational asthma should be kept in mind whenever you make a new asthma diagnosis in an adult. In addition to careful history-taking around occupation and

symptoms, a period of peak flow charting indicating when the patient is at work is vital. Patients in whom occupational asthma is suspected should be referred for specialist assessment but should chart their peak flow until seen. Further information about occupational asthma is available at https://www.asthmaandlung.org.uk/conditions/asthma/occupational-asthma

Does peak flow monitoring have any place in the diagnosis of COPD?

Peak flow measurement is not adequate for COPD diagnosis, but it can be informative. During the pandemic, PCRS developed a position statement on spirometry that encouraged the use of PEFR charting if full spirometry would otherwise delay the initiation of therapy for COPD beyond a reasonable period. This statement advises that for patients with suspected COPD, a tentative diagnosis using PEFR diary monitoring can be made because a PEFR <75% predicted suggests a degree of airflow obstruction. Then, with serial measurements over 2 weeks that do not vary but also remain low despite the use of salbutamol for symptom relief, a clinical suspicion can be objectively supported until confirmatory spirometry is performed. As asthma can develop at any age, and if late-onset asthma (or COPD with a substantial reversible component) is suspected, then peak flow charting in addition to spirometry can be valuable and provide additional useful diagnostic information.

Do patients with asthma need to continue to monitor their peak flow?

Usually not. But it is worth keeping their peak flow meter and knowing their best and lowest readings. Restarting peak flow measurements may be useful for some people as part of a personal asthma action plan. Most patients can effectively self-manage based on symptoms alone, but some are slow to recognise significant deteriorations, and they may find regular peak flow checking helpful.

Microspirometry

Simple, inexpensive microspirometers, programmed at each use with the patient's age, height, and sex, can give good, accurate readings of FEV_1 (forced expiratory volume in 1 second) and express this as percent predicted. The simplest and cheapest devices measure FEV_1 only, but some are now available cheaply that also provide FEV_6, FVC, and will calculate the FEV_1 /FVC ratio.

The necessary expiratory manoeuvre and the correct use of the instrument are more demanding than the measurement of peak flow, but it is possible both to teach their use and to supervise their performance by video link.

Microspirometer

These instruments are not a substitute for full diagnostic spirometry in COPD. But as with PEFR charting, until timely access to full diagnostic spirometry is possible, it is much better to obtain some results from microspirometry than to rely solely on clinical features for a diagnosis of COPD.

The simplest microspirometers are useful for investigating adults—especially symptomatic older smokers—for possible COPD. An FEV_1 of 80% predicted or less should prompt consideration of full diagnostic spirometry. Note that if COPD is being considered as a diagnosis, then diagnostic spirometry should be done at least 4-6 weeks after the resolution of acute symptoms. If asthma is suspected, then what you need is a microspirometry at the time the patient is symptomatic, with measurements of FEV_1 before and after treatment.

In the assessment of asthma, a rise in FEV_1 of 12% and at least 200ml with time or treatment is suggestive of asthma. An increase of 400ml or more in FEV_1 is strongly suggestive of asthma. Here, the key difference is that measurements both before and after treatment or resolution of acute symptoms provide the best information.

Conclusion

Asthma diagnosis is difficult, and the best approach to a confident diagnosis remains a matter of controversy. There are concerns about overdiagnosis, although delayed diagnosis is also still a problem. The latest BTS/SIGN asthma guideline[3] contains a comprehensive discussion of the approach to diagnosis and recommends spirometry as the preferred test of airway obstruction. The NICE guideline on diagnosis and monitoring of asthma suggests a different approach involving the measurement of Fractional Exhaled Nitic Oxide (FeNO) in addition to spirometry. Both guidelines retain a place for peak

flow measurements but relegate these to a subsidiary role. However, spirometry is very often normal in suspected asthma in primary care. The quality of full diagnostic spirometry in primary care is variable, and substantial training is needed if it is to be easily available to all. Issues of training and the availability of quality-assured spirometry have prompted the development of community diagnostic hubs for the provision of this and other diagnostic services, but this remains a work in progress due to pandemic delays in network development, and such hubs are not yet available in many areas.

Peak flow monitoring, which is cheap, (relatively) simple, and easily repeatable, and microspirometry should both play an important role in respiratory diagnosis. Their importance and usefulness have increased following the pandemic experience. All primary healthcare professionals involved in respiratory care should know how to teach their use and interpret their results.

Acknowledgement
PCRS would like to acknowledge Dr Duncan Keeley who authored the original version of this article and updated during the COVID-19 pandemic. The article has been further updated to take account of current practice post pandemic.

References

1. Taskforce for Lung Health. The gaping hole in respiratory care. Health Service Journal https://www.hsj.co.uk/public-health/the-gaping-hole-in-respiratory-care/7034483.article (2023).
2. NICE. NICE guideline [NG80] Asthma: diagnosis, monitoring and chronic asthma management. Published date: 29 November 2017 Last updated: 12 February 2020 https://www.nice.org.uk/guidance/ng80.
3. BTS_SIGN Guideline for the management of asthma 2019 https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/.

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At a glance - FeNO testing in asthma

Carol Stonham, *PCRS Policy Lead*

To consider how and when we use FeNO testing, we need to go to the definition of asthma. Both BTS/SIGN[1] and GINA[2] define it as a predominantly inflammatory disorder of the airways with airway hyperresponsiveness and variability in symptoms.

Nitric oxide is a gas involved in the respiratory process and is present in the atmosphere in very small amounts (parts per billion). It can be easily measured in exhaled breath using a fractional exhaled nitric oxide (FeNO) test. A raised FeNO is associated with eosinophilic inflammation of the airways, which is the characteristic inflammation of asthma. It can therefore be used as a test to support a diagnosis of asthma. The BTS/SIGN and NICE guidelines for asthma diagnosis currently make different recommendations on when FeNO should be used. PCRS has produced a guide for pragmatic interpretation of the different guidelines in clinical practice - to view the article, scan the QR code.

FeNO is a simple test that most people can easily perform. It can be used with children from as young as 5 years with coaching. It forms a part of the jigsaw we need to make an accurate diagnosis of asthma. Testing and interpretation of the results should be an add-on to existing asthma training and competence.[3] Training modules have been developed as a part of the Accelerated Access Collaborative (AAC) project to increase the uptake of FeNO in primary care. The modules are available free of charge at https://www.e-lfh.org.uk/programmes/feno-in-asthma/

Outside of supporting a suspected clinical diagnosis, FeNO is a test that is useful selectively in other parts of the asthma pathway. At the time of diagnosis or at a later time, it can act as an educational tool to help patients understand and 'see' the inflammation in their airways that is associated with a diagnosis of asthma. With the right explanation delivered by a healthcare professional and by showing falling FeNO levels with treatment, it also helps with the understanding of how inhaled corticosteroids treat the active inflammation to control symptoms, which in turn supports ongoing self-management. It is also a useful tool when recordings are found to be raised, despite prescribed therapy, to open a conversation about adherence.

FeNO can be useful when making decisions about escalating therapy when persistent or increasing symptoms are present but adherence to inhaled corticosteroids is not identified as a problem. If reduced FeNO levels show that the inflammation is now under control, then adding a long-acting bronchodilator may be the next step. It may also, however, highlight the need to explore an alternative diagnosis or co-morbidity.

Stepping down asthma medication is recommended by guidelines, but do we avoid this for fear of rocking the boat? When people have been asymptomatic for several months and are not approaching a period with known asthma triggers (pollen season, back to school, and winter) and are not approaching a significant life event (marriage, exams), FeNO monitoring can assure that inflammation is well controlled and give confidence to both patient and health care professional that now might be a good time to reduce anti-inflammatory medication, especially for those on moderate (>800mcg BDP equivalent) and high (>1000mcg BDP

equivalent) doses. Another test a month later to check/reassure that a reduction in medication was the right decision is also useful.

To assist with FeNO delivery in primary care, PCRS is hosting a variety of resources. These include patient information leaflets in English and seven other languages, sample business cases, and case studies. There is also guidance on the FeNO Arden's template to ensure information is coded and retrievable for audit and evaluation, and infection prevention and control guidance. Scan the QR code to view the new FeNO resources page.

The AAC project has increased the availability of FeNO in primary care, but it is not yet available to patients consistently across the UK. PCRS supports the move to provide locally accessible, timely testing for patients presenting with symptoms and a history in keeping with a diagnosis of asthma, and that the testing and interpretation of tests be carried out by trained staff. Scan the QR code to view the FeNO testing article.

References
1. British Thoracic Society, Scottish Intercollegiate Guidelines Network. British guideline on the management of asthma. 2019. Available at: https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/ (accessed 2 April 2023)
2. NICE. Asthma: diagnosis, monitoring and chronic asthma NG80. 2017. Available at: https://www.nice.org.uk/guidance/ng80 (accessed 2 April 2023)
3. Lawlor R. Primary Care Respiratory Society. Fit to Care: key knowledge skills and training for clinicians providing respiratory care. February 2022. https://www.pcrs-uk.org/resource/fit-care (accessed 12 April 2023)

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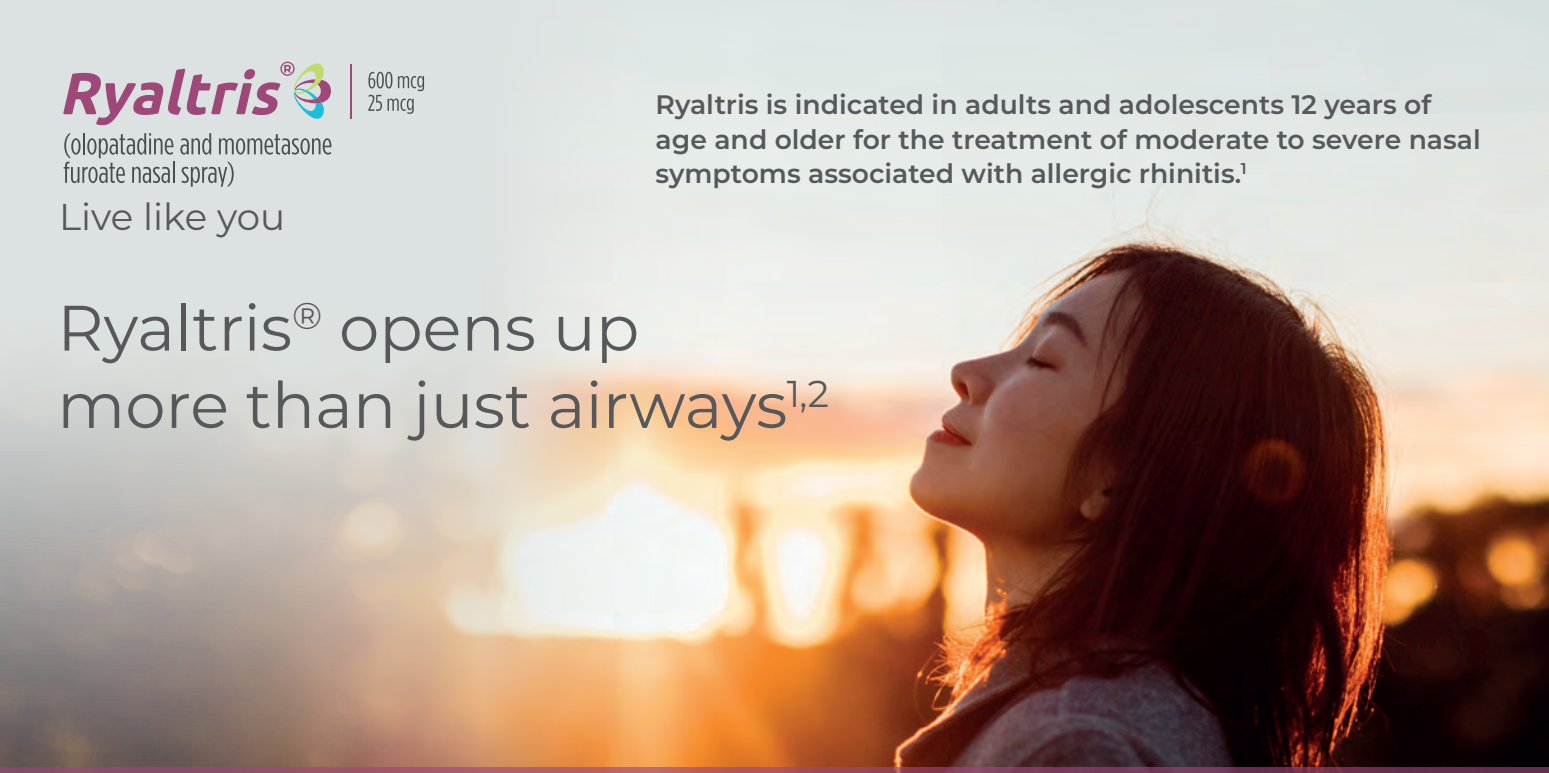
Ryaltris is indicated in adults and adolescents 12 years of age and older for the treatment of moderate to severe nasal symptoms associated with allergic rhinitis.[1]



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Ryaltris (mometasone furoate and olopatadine hydrochloride) **Please refer to the Summary of Product Characteristics (SmPC) before prescribing.** One delivered dose contains mometasone furoate monohydrate equivalent to 25 microgram mometasone furoate and olopatadine hydrochloride equivalent to 600 micrograms olopatadine. **Indication:** treatment of moderate to severe nasal symptoms associated with allergic rhinitis in adults and adolescents 12 years of age and older **Posology and method of administration:** The usual recommended dose is two actuations in each nostril twice daily (morning and evening). *Children below 12 years:* Ryaltris is not recommended. Elderly: No dose adjustment required. *Renal and hepatic impairment:* there are no data in patients with renal and hepatic impairment, however no dose adjustment is expected to be required. **Contraindications:** Hypersensitivity to the active substances or to any of the excipients. Ryaltris should not be used in the presence of untreated localised infection involving the nasal mucosa, such as herpes simplex. Patients who have experienced recent nasal surgery or trauma should not use a nasal corticosteroid until healing has occurred. **Precautions:** *Local nasal effects:* nasal ulceration and nasal septal perforation have been reported in patients following intranasal antihistamines. Nasal septal perforation has been reported following intranasal corticosteroids. Patients using Ryaltris over several months or longer should be examined periodically for possible changes in the nasal mucosa. Ryaltris is not recommended in cases of nasal septum perforation. In clinical studies with mometasone furoate administered intranasally, the development of localised infections of the nose and pharynx with *Candida albicans* has occurred; may require treatment and discontinuation of Ryaltris. Patients using Ryaltris over several months or longer should be examined periodically for evidence of Candida infection or other signs of adverse effects on the nasal mucosa. *Visual disturbances* may be reported with systemic and topical corticosteroid use. Symptoms such as blurred vision or other visual disturbances should be considered for ophthalmologist referral for evaluation of possible causes including cataract, glaucoma or rare diseases such as central serous chorioretinopathy (CSCR). *Hypersensitivity Reactions* including instances of wheezing, may occur. Discontinue Ryaltris if such reactions occur. *Immunosuppression:* Chickenpox and measles, for example, can have a more serious or even fatal course in susceptible patients and those using corticosteroids. In children or adults who have not had these diseases or been properly immunized, particular care should be taken to avoid exposure. 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. If such changes occur, the dosage of Ryaltris should be discontinued slowly, consistent with accepted procedures for discontinuing oral corticosteroid therapy. The concomitant use of intranasal corticosteroids with other inhaled corticosteroids could increase the risk of signs or symptoms of hypercorticism and/or suppression of the HPA axis. If there is evidence for higher than recommended doses being used, then additional systemic corticosteroid cover should be considered during periods of stress or elective surgery. The replacement of a systemic corticosteroid with a topical corticosteroid can be accompanied by signs of adrenal insufficiency, and some patients may experience symptoms of withdrawal. Patients previously treated for prolonged periods with systemic corticosteroids and transferred to topical corticosteroids should be carefully monitored for acute adrenal insufficiency in response to stress. In those patients who have asthma or other clinical conditions requiring long term systemic corticosteroid treatment, too rapid a decrease in systemic corticosteroids may cause a severe exacerbation of their symptoms. *Somnolence:* in isolated cases dizziness, lethargy, fatigue and somnolence may occur when using Ryaltris. In these cases, the ability to drive and use machines may be impaired. Alcohol and other CNS depressants may enhance this effect. *Antihistamine effects:* concomitant use of other antihistaminic drugs administered may increase the risk of antihistamine adverse effects. *Paediatric population:* It is recommended that the height of children receiving prolonged treatment with nasal corticosteroids is regularly monitored. If growth is slowed, therapy should be reviewed with the aim of reducing the dose of nasal corticosteroid if possible, to the lowest dose at which effective control of symptoms is maintained. *Excipients:* Ryaltris contains 0.02 mg benzalkonium chloride in each actuation. Benzalkonium chloride may cause irritation or swelling inside the nose, especially if used for a long time. **Adverse reactions:** *Common (≥1/100 to <1/10):* dysgeusia (unpleasant taste), epistaxis, nasal discomfort. *Uncommon (≥1/1,000 to <1/100):* dizziness, headaches, somnolence, nasal dryness, dry mouth, abdominal pain, nausea, fatigue. *Rare (≥1/10,000 to <1/1000)* bacterial vaginosis, anxiety, depression, insomnia, lethargy, migraine, blurred vision, dry eye, eye discomfort, ear pain, nasal inflammation, nasal mucosal disorder, oropharyngeal pain, sneezing, throat irritation, constipation, sore tongue, laceration. *Incidence not known (reported from use of corticosteroids):* pharyngitis, upper respiratory tract infection, hypersensitivity including anaphylactic reactions, angioedema, bronchospasm, and dyspnoea, cataracts, glaucoma, increased intraocular pressure, nasal septum perforation. **Marketing authorisation number:** PL 25258/0331 **Marketing Authorisation Holder and distributer:** Glenmark Pharmaceuticals Europe Limited, Laxmi House, 2B Draycott Avenue Kenton, Middlesex, HA3 0BU. United Kingdom **Legal classification:** POM **Cost:** £13.32. 1 bottle with 29 g suspension (240 actuations) **Date of preparation:** June 2021. **Job number:** PP-UK-RYAL-0001

Adverse events should be reported. Reporting forms and information can be found at https://yellowcard.mhra.gov.uk. Adverse events should also be reported to Glenmark Pharmaceuticals Europe Ltd medical_information@glenmarkpharma.com or call 0800 458 0383

References: 1. Ryaltris Summary of Product Characteristics. **2.** Gross GN, *et al.* Ann Allergy Asthma Immunol 2019;122:630–638. **3.** Hampel FC, *et al.* Allergy Asthma Proc 2019;40(4):261–272. **4.** Segall N, *et al.* Allergy Asthma Proc 2019;40(5):301–310.

Date of preparation: March 2023
PP-UK-RYAL-0086 V2

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Focus on asthma: The GINA Approach to Managing Asthma

Darush Attar Zadeh,[1] Katherine Hickman,[2] Ren Lawlor,[3] Alicia Piwko,[4] Lizzie Williams[5]

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Asthma is a long-term condition characterised for the vast majority by eosinophilic airway inflammation. In the UK, anti-inflammatory therapy options are easily accessed, affordable and are highly effective with minimal side effects. However, many people with asthma do not use enough or timely amounts of this therapy in order to control their symptoms and prevent attacks. This is seen when people attend in crisis at emergency departments, make urgent appointments with their GPs, miss work or school; and sadly, poor management still causes death.

In 2022, using the available Quality and Outcomes Framework (QOF) data from UK general practice registers, 6.5% or 3,745,077 people over the age of six were diagnosed with asthma.[1] The vast majority of asthma care occurs in general practice. Planned and routine asthma care can allow the vast majority to live well with asthma and avoid emergency care.

This spring, the Primary Care Respiratory Society brings you a new focus on asthma and outlines a new approach to ensure timely use of anti-inflammatory medicine for people that have not benefited as well from historic treatment pathways.

The Medicines and Healthcare Products Regulatory Agency (MHRA) has for the first time approved the use of a dual (ICS/Formoterol) combination treatment to be used as a reliever therapy for people aged 12 and over with the therapy choice situated early in the asthma treatment pathway as an alternative to its current use as a preventer or MART therapy sitting later in traditional treatment pathways.[2]

The MHRA approval is for Budesonide 200mcg/Formoterol 6mcg combination that is delivered as dry powder via a turbohaler. In recent trials, the use of this dual therapy, utilising the fast-acting property of formoterol for quick relief resulted in reductions in asthma attacks compared to the use of short acting beta agonists alone.[3]

In the UK, this new therapy option does not yet sit within an approved national guideline as NICE last updated its treatment pathway in 2020.[4] We await a new national asthma guideline but do not anticipate this new joint approach between NICE, BTS and SIGN to publish until 2024.

In the meantime, PCRS has looked to the latest Global Initiative for Asthma (GINA) approach to asthma treatment to see how this new approach fits and we have developed a simple algorithm for healthcare practitioners to see where this new treatment option sits.[5]

At PCRS, we know how busy primary care is and realise that introducing a new treatment choice means change and that change takes time, can use up scarce resources, and can feel burdensome. In this Spring's issue of *Primary Care Respiratory Update* we will also show you how to take small steps to try out this new treatment pathway on a limited patient group, using a real-world test of change in a GP practice and show the key steps to help make implementation a success.

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PCRS would like to acknowledge the work undertaken in New Zealand by Richard Beasley et al in developing a pragmatic approach to the implementation of GINA recommendations.

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- Dr Mike Crooks, Hull University Teaching Hospitals NHS Trust
- Dr Andrew Whittamore, Asthma and Lung UK
- Dr Alex Wilkinson, East and North Herts NHS Trust

References

1. NHS UK GP QOF Contract Database. 2022 http://www.gpcontract.co.uk.
2. Medicines regulator approves UK's first dual combination inhaler for mild asthma. The Pharmaceutical Journal https://pharmaceutical-journal.com/article/news/ medicines-regulator-approves-uks-first-dual-combination-inhaler-for-mild-asthma (2023).
3. O'Byrne, PM et al. Inhaled Combined Budesonide–Formoterol as Needed in Mild Asthma N Engl J Med 378, 1865–1876 (2018).
4. NICE. NICE guideline [NG80] Asthma: diagnosis, monitoring and chronic asthma management. Published date: 29 November 2017 Last updated: 12 February 2020 https://www.nice.org.uk/guidance/ng80.
5. GINA. GINA-2022-Pocket-Guide-WMS. Global Initiative for Asthma 1–50 https://ginasthma.org/wp-content/uploads/2022/07/GINA-2022-Pocket-Guide-WMS.pdf (2022).

For more information see

Richard Beasley, Irene Braithwaite, Alex Semprini, Ciléin Kearns, Mark Weatherall, Tim W. Harrison, Alberto Papi, Ian D. Pavord. ICS-formoterol reliever therapy stepwise treatment algorithm for adult asthma European Respiratory Journal 2020 55: 1901407; DOI: 10.1183/13993003.01407-2019
Also see https://www.asthmafoundation.org.nz/assets/images/NZ-Asthma-Guidelines-Quick-Reference-Guide-2020-Online-09-21.pdf

We'll also be bringing you a series of resources in this Spring's Primary Care Respiratory Update which includes more information on how to assess asthma control as well as a series of other resources including:

- The presenting features of asthma and the importance of correct diagnosis using objective airflow measurement and Fractional Exhaled NO (FENO) to support any clinical suspicion.
- The non-pharmacological elements of asthma care that ensure the use of anti-inflammatory therapy is clinically effective and safe.
- How to deliver an effective asthma review in ten minutes
- The importance of choice of therapy and device, and that the greenest asthma care is a well-managed asthma patient using an inhaler device they can and will use
- How to recognise when asthma is difficult to manage and severe and know when to ask for help.

You can view all our asthma resources including online learning modules, asthma myths videos and other tools directly from the PCRS website

PCRS guide to the management of asthma aged 12 and over in primary care

Before treating asthma, check that the criteria for diagnosis are present and correct*.
Ensure that you, as the prescriber, can describe to the person with asthma:

- The criteria by which they have been given the diagnosis
- What they can do to help manage it
- What can happen if it's left unmanaged

Any asthma treatment will be more effective if it is created and agreed by both the patient and the clinician, reflects the patient's wishes, encourages self-management and clearly states when to seek further clinician support. **These wishes and choices should:**

Be written down or recorded in another way e.g. voice or video note that is understood

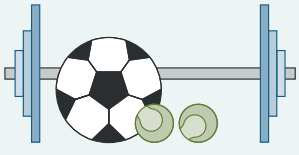
Include inhaler choice with respect to design, usability, cost and environmental impact

Describe communication options when help is needed or the plan isn't working anymore

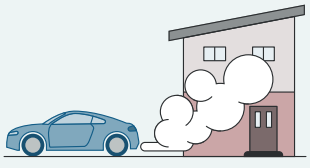
Confirm that the person with asthma understands that the foundation of asthma medical therapy is ensuring that any airway inflammation arising due to triggers such as allergens, pollutants and infections is controlled by an inhaled corticosteroid.

Short- acting beta-agonists are used to dilate airways and do not treat underlying asthma inflammation. Over-reliance on SABA in asthma is associated with an increased risk of asthma attacks and asthma deaths.

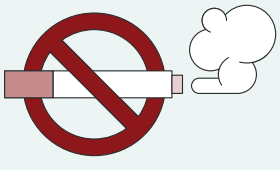
Patients may be successfully managed on a lower dose of inhaled corticosteroids and require fewer doses if they can be supported to:



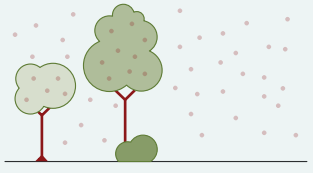
Maintain a healthy weight and be active



Understand the impact of indoor and outdoor air pollution and, where possible, how to avoid it



Avoid smoking/smoky environments and/or seek support to quit smoking



Understand asthma triggers (pollen, animal fur, perfumes etc.) and how to avoid or modify their effect

*Where asthma is suspected but there is a delay in diagnostic testing, treatment should be initiated based on clinical judgement while awaiting objective diagnostic testing results

Path 1: Dual anti-inflammatory reliever pathway

Low-dose (ICS-Formoterol)
200mcg budesonide and 6mcg formoterol, 2 actuations per day

Moderate-dose (ICS-Formoterol)
200mcg budesonide and 6mcg formoterol, 4 actuations per day

1		ICS – Formoterol PRN		Low-dose (ICS – Formoterol) dual reliever PRN as needed (one actuation) for relief of asthma symptoms (without regular maintenance treatment)*.
2	ICS – Formoterol 1 puff BD	ICS – Formoterol PRN		Low-dose (ICS – Formoterol) 2 actuations (1 actuation BD, or 2 actuations OD) with PRN use as required.
3	ICS – Formoterol 2 puffs BD	ICS – Formoterol PRN		Moderate-dose (ICS – Formoterol) 4 actuations (2 actuations BD) with PRN use as required.
4	ICS – Formoterol 2 puffs BD	ICS – Formoterol PRN	LTRA	Consider add-on therapy with LTRA, reviewing after 4-6 weeks and withdrawing if not effective or tolerated.
5				If medicinal therapy at step 4 is not controlling asthma symptoms then refer for help from an asthma specialist.

Step up if control is not achieved and step down level when control is achieved

* Budesonide 200mcg and Formoterol 6mcg is licensed for use as a reliever, as needed in response to asthma symptoms in Step 1 without regular maintenance treatment

Path 2: Alternative path – Traditional approach

1	ICS	SABA		Low-dose inhaled corticosteroid (ICS) each time a short-acting beta-agonist (SABA) is required for relief of asthma symptoms.
2	ICS	SABA		Low-dose daily maintenance ICS as prescribed and use SABA as reliever PRN.
3	ICS-LABA	SABA		Low-dose daily maintenance (ICS-LABA) as prescribed with SABA as reliever PRN.
4	ICS-LABA	SABA		Moderate-dose (ICS up to 800mcg BDP equivalent) daily maintenance (ICS-LABA)as prescribed with SABA as reliever PRN.
5	ICS-LABA	SABA	LTRA	If add-on therapy is required offer a leukotriene receptor antagonist (LTRA) and review at 4-6 weeks for efficacy and tolerability. Withdraw if not effective or tolerated.
6				If medicinal therapy at step 4 is not controlling asthma symptoms then refer for help from an asthma specialist.

Step up if control is not achieved and step down level when control is achieved

Notes

1. Inhalers shown in this document are for illustrative purposes only. Please see prior page regarding inhaler selection
2. Some medicines in this document are only licenced in people aged 18 years and above
3. Please scan the QR code for advice regarding asthma control

Scan the QR code for more on asthma control

Implementing the new treatment option in practice

The Medicines and Healthcare Products Regulatory Agency (MHRA) has for the first time approved the use of a dual (ICS/beta-agonist) combination treatment to be prescribed as a reliever therapy for people aged 12 and over with the therapy choice situated early in the asthma treatment pathway as an alternative to its current use as a preventer therapy sitting later in traditional treatment pathways.

The MHRA approval is for Budesonide 200mcg /Formoterol 6mcg combination that is delivered as dry powder via a turbohaler. In recent trials, dual therapy, using

the fast-acting property of formoterol for quick relief resulted in reductions in asthma attacks compared to the use of short-acting beta-agonists alone.

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At PCRS, we know how busy primary care is and realise that introducing a new treatment choice means change and that changes take time, can use up scarce resource, and can feel like a threat. In this resource, we will show you how to take small steps to try out this new treatment pathway on a limited patient group, using a real-world test of change in a GP practice and show the key steps to help make implementation a success.

Figure 1 . Example of a primary care nurse and pharmacist-led, time-limited project to incorporate anti-inflammatory with reliever (AIR) therapy options for people in a practice asthma population identified as having possibly poor asthma control

Implementation task	Offer the new GINA AIR therapy option to people with asthma and review the impact
Choose a specific patient group.	• People with asthma as a single long-term physical health condition aged between 12 and 35 and one or more of: o More than 3 SABA devices prescribed in the last 6 months o Less than 3 or 5 ICS pick ups a year o Use of oral corticosteroids for asthma in the last year o A+E attendance for asthma in the last year
Determine what process and outcome metrics you will take about the patient group receiving the change and the group not receiving this change.	• The practice annual asthma review template and protocol will be followed for all • People within the test cohort will receive a text or letter or email offering a telephone or in-person annual asthma review, as usual • The offer of AIR therapy will be offered if appropriate once an initial assessment of control has been made and a change in therapy is considered to be required • The asthma control test will be used to assess the impact

Continued on page 26

Continued from page 25

Implementation task	Offer the new GINA AIR therapy option to people with asthma and review the impact
Describe how, when, by who, and for how long, will people in this group be assessed for the change.	• The patients will be booked in by reception with the 2 asthma practitioners (one asthma nurse, one asthma pharmacist) for this review who will follow a common process* • A review of the process will commence once 30 patients have been seen for an initial appointment and for a 6 week follow up to assess patient asthma control, safety and experience of patient and staff involved in the care pathway
Record how you have been assured regarding your clinical governance if derogating from current NICE guidance.	• This quality improvement plan was discussed at the network respiratory meeting. The respiratory network includes a respiratory specialist, a clinical network lead for primary care asthma, a network respiratory pharmacist and community pharmacist and lay patient members amongst others
Describe how your change aligns with and is supported by the wider system you work in.	• The locality asthma specialists were already utilising AIR therapy in specialist clinics and in discussion with emergency department physicians in order to avoid their 'revolving door' emergency SABA use situation • The respiratory network wanted to use this learning to consider a change to local asthma treatment protocols
Describe how you will engage the health workers directly and indirectly involved in the change.	• The practice will have a session at a routine practice learning time involving clinical and non-clinical staff describing the rationale and process and then provide the results and take feedback after the first 30 cohort has completed
Describe the material you will use to further support patients to choose.	• A short patient leaflet was designed describing the new therapy option with a o Link to an NHS video describing airway inflammation and how anti-inflammatory inhalers work to reduce it o Contact details for the asthma nurse and pharmacist • A written personal asthma action plan

*One of the reviews may take place virtually and one in-person

This process chosen by one practice contains some of the key implementation principles to make a quality improvement project a success. In reality, each of the action sections on the right column has further smaller steps within them. Once you have decided on your plan, it is worth listing out all the tasks you think might be involved and then putting them in order with a realistic timeline against them. Then take them one step at a time.

Intended for UK healthcare professionals only.

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Tiogiva (tiotropium bromide) 18 mcg inhalation powder
Please refer to the Summary of Product Characteristics (SmPC) before prescribing.
Presentation: Delivered dose: 10 mcg of tiotropium per capsule (the dose that leaves the mouthpiece is 12.1 microgram tiotropium bromide). Each capsule contains 21.7 mcg of tiotropium bromide, equivalent to 18 mcg of tiotropium. **Indications:** Maintenance bronchodilator treatment to relieve symptoms of patients with chronic obstructive pulmonary disease (COPD). **Dosage and administration:** For inhalation only. Must not be swallowed. Inhalation should be at the same time each day. *Adults:* Inhalation of the contents of one capsule once daily with the dry powder inhaler. To get a full daily dose, the patient must breathe out completely. The patient should also inhale a second time from the same capsule. See SmPC for administration and instructions for use. *Children:* Not to be used in children or adolescents <18 years of age. *Elderly:* No special requirements. *Renal Impairment:* Mild (creatinine clearance >50 ml/min): no special requirements. Moderate to severe (creatinine clearance ≤50 ml/min): Use only if expected benefit outweighs the potential risk. There is no long-term experience in patients with severe renal impairment. *Hepatic Impairment:* No special requirements. **Contraindications:** Hypersensitivity to the active substances or to any of the excipients, or to atropine or its derivatives, e.g. ipratropium or oxitropium. **Precautions:** Not to be used for the initial treatment of acute episodes of bronchospasm, i.e. rescue therapy. Immediate hypersensitivity reactions may occur. Use with caution in patients with narrow-angle glaucoma, prostatic hyperplasia or bladder-neck obstruction. Inhaled medicines may cause inhalation-induced bronchospasm. Use with caution in patients with recent myocardial infarction <6 months; unstable or life-threatening cardiac arrhythmia; cardiac arrhythmia requiring intervention or a change in drug therapy in the past year; hospitalisation for heart failure (NYHA Class III or IV) within past year. Avoid getting the powder into eyes (may result in precipitation or worsening of narrow-angle glaucoma, eye pain or discomfort, temporary blurring of vision, visual halos or coloured images in association with red eyes from conjunctival congestion and corneal oedema. Should any combination of these eye symptoms develop, patients should stop using Tiogiva and consult a specialist immediately). Dry mouth, which has been observed with anti-cholinergic treatment, may in the long term be associated with dental caries. Tiogiva should not be used more frequently than once daily. Contains lactose; patients with rare hereditary problems of galactose intolerance, total lactase deficiency or glucose-galactose malabsorption should not take this medicine. The excipient lactose monohydrate may contain small amounts of milk proteins which may cause allergic reactions. **Interactions:** No formal drug interaction studies have been performed. Co-administration with other anticholinergic drugs not recommended. **Adverse reactions:** *Common:* dry mouth. *Uncommon:* dizziness, headache, taste disorders, vision blurred, atrial fibrillation, pharyngitis, dysphonia, cough, gastro-oesophageal reflux disease, constipation, oropharyngeal candidiasis, rash, dysuria, urinary retention. *Rare:* insomnia, glaucoma, intraocular pressure increased, supraventricular tachycardia, tachycardia, palpitations, bronchospasm, epistaxis, laryngitis, sinusitis, intestinal obstruction, including ileus paralytic, gingivitis, glossitis, dysphagia, stomatitis, nausea, urticaria, pruritus, hypersensitivity (including immediate reactions), angioedema, urinary tract infection. *Frequency not known:* dehydration, dental caries, anaphylactic reaction, skin infection, skin ulcer, dry skin, joint swelling. Please consult the summary of product characteristics for further information. **Marketing Authorisation Number:** PL 25258/0370. **Marketing authorization Holder:** Glenmark Pharmaceuticals Europe Limited Laxmi House, 2B Draycott Avenue, Kenton, Harrow, Middlesex, HA3 0BU, UK. **Distributer:** As above. **Legal classification:** POM. **Price:** 30 capsules + inhaler £19.99, 30 capsules £19.20, 60 capsules £38.40. **Job code:** PP-UK-TIO-0055. **Date of preparation:** September 2021

Adverse events should be reported.
Reporting forms and information can be found at https://yellowcard.mhra.gov.uk.
Adverse events should also be reported to Glenmark Pharmaceuticals Europe Ltd
medical_information@glenmarkpharma.com or call 0800 458 0383

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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PCRS members can log in to access the modules via their online dashboard, where you'll also be able to download a certificate of completion and a factsheet for future reference.

PCRS is grateful to Trudell Medical UK Limited for their support of the Delivering Greener Sustainable respiratory care online learning modules. The sponsor has had no input into the content.

You Have 10 Minutes for an Asthma Review

Your Time Starts NOW

Introduction

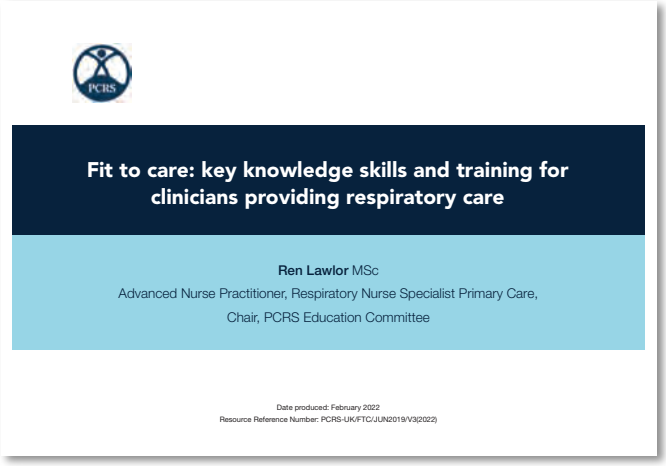
In an ideal world, asthma review appointments will be between 20 to 30 minutes in duration. But we are not living in an ideal world. Staff shortages due to ill health, burnout, and workforce issues are compounding an already pressured system, and in many practices, the maths doesn't stack up; there are simply not enough hours in the year to see everybody in the recommended time.

If practices are struggling to recruit staff to do the reviews, the time allocation for asthma reviews may be reduced to 10 minutes. Whatever the situation in your practice, there are some key steps you can take to ensure that if you do only have 10 minutes to see your patient with asthma, whether at an annual review, for a new diagnosis, a flare-up, or for a post-attack review, the basics are covered.

Getting Asthma Review Ready

In order to ensure you maximise your time during an asthma review, preparation beforehand is essential and will ultimately save you time in the long run.

WHO is 'Fit to Care'? Asthma Reviews are carried out by those trained to do so. The PCRS Fit to Care document sets out the skills, knowledge, and training required for healthcare professionals at standard, advanced, and expert levels, irrespective of profession.



WHERE and **WHEN** are you going to be seeing the patient?

Practice and Practitioner

Regardless of whether or not you are going to be seeing the patient face-to-face, speaking on the telephone, or via video consultation, some things need to be in place to support success.

- **Administration Team**: Review the invite process; who needs prioritising?
- **Equipment**: Make sure you have everything you need at your workstation:
  - **Placebo** devices
  - **Internet** access to show/send inhaler technique videos if no placebos.

- **Guidelines**: Local guidelines are to hand.
- 3D **Airways models** or a **diagram** of the airways - scan the QR code to view IPCRG How we Breathe Video - https://www.youtube.com/watch?v=zrA3f5LzFeY
- **Personal Asthma Action Plans (PAAP)** either paper or digital (Asthma and Lung UK provide lots of information on asthma action plans - scan the QR code to view A+LUK page https://www.asthmaandlung.org.uk/research-health-professionals/health-professionals)

Patient

- **PAAP**: Patient has a copy of their PAAP or a new one with them.
- **Asthma Control Test (ACT)**: Ideally filled out before their appointment - scan the QR code to view Asthma Control Test - https://www.asthmacontroltest.com/en-gb/welcome/)
- **Inhalers**: The patient has their inhalers with them.

Your Time Starts NOW

WHY am I seeing this patient and do they know WHY they are taking inhalers?

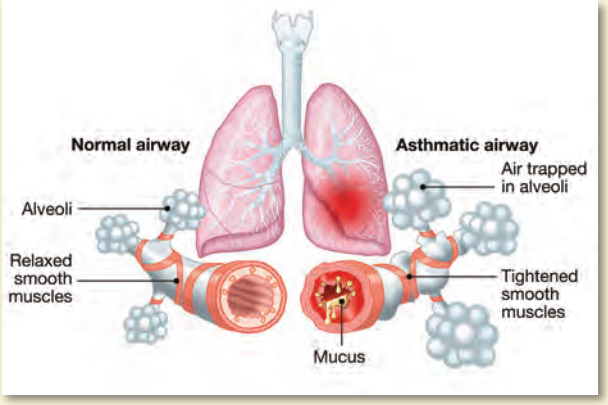
Is there evidence of **objective variability** at the time of their **diagnosis**?

This should be obvious and easy to find, but very often it isn't. If there is any doubt, this is not something that can be tackled in a 10-minute review appointment. This will require a separate appointment with a clinician confident in diagnosing asthma. This is NOT a wasted appointment but is vital to ensuring the patient gets the correct diagnosis. If you are that confident clinician, it may be worth abandoning the review at this point and focusing on unpicking the asthma diagnosis here and now.

WHY am I taking these inhalers?

Below is a script that can be adapted and will hopefully support your patient to understand what is going on in their airways if they need a refresher or are unsure.

As you can see, this is a model of a wide-open airway, and air can flow easily through it. The surrounding muscles are nice and relaxed. You can see from this model that there is a lot of inflammation on the inside of the airway and how narrow the opening has become. If left untreated, over time, the inflammation gets worse, and you can see from this model that there is now also mucus plugging up the airway. When the airways are narrow like this, it can be difficult to breathe, and you may cough or wheeze.

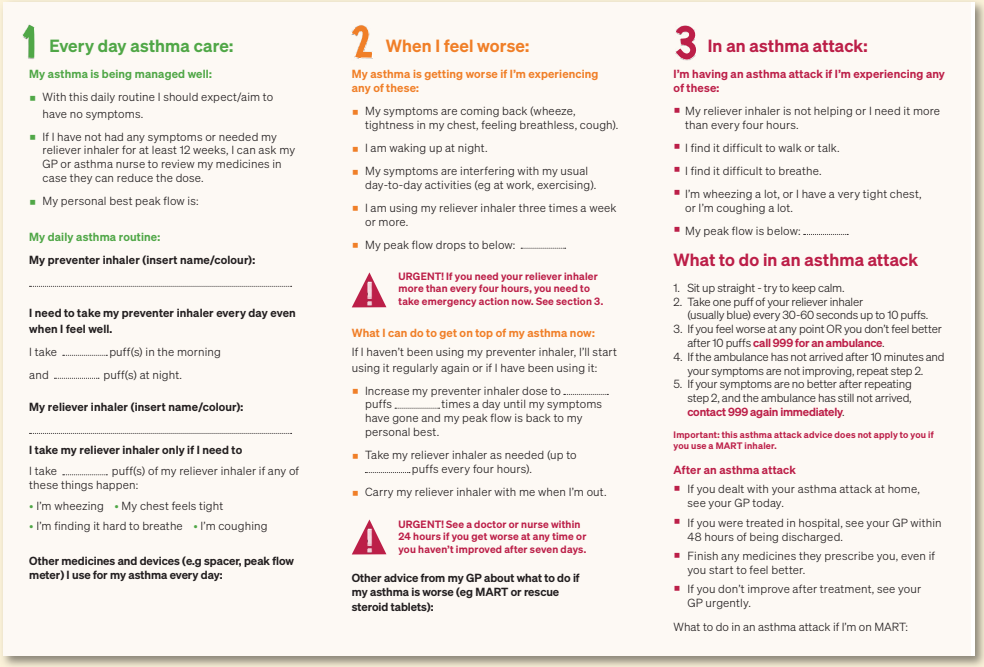


This is why you need a preventer inhaler. An inhaler that you take regularly every day; they work slowly over time, are long-lasting, and reduce inflammation while opening up the airways.

In this model, we can see the muscle bands are tightening around the airways. Your rescue inhaler, which tends to be blue, relaxes these muscles on the outside of the airways. It is a quick rescue that makes you feel better, but the relief is temporary and only lasts a few hours. The muscles are relaxed by the rescue inhaler, BUT it ONLY works on these muscles and does nothing for the inflammation on the inside.'

WHAT does supported self-management look like to the patient?

Start with an overview of the PAAP and ensure they understand every point, pausing for feedback or questions.



1 Every day asthma care:

My asthma is being managed well:

- With this daily routine I should expect/aim to have no symptoms.
- If I have not had any symptoms or needed my reliever inhaler for at least 12 weeks, I can ask my GP or asthma nurse to review my medicines in case they can reduce the dose.
- My personal best peak flow is:

My daily asthma routine:

My preventer inhaler (insert name/colour):

.....

I need to take my preventer inhaler every day even when I feel well.

I take .....puff(s) in the morning

and ..... puff(s) at night.

My reliever inhaler (insert name/colour):

.....

I take my reliever inhaler only if I need to

I take ..... puff(s) of my reliever inhaler if any of these things happen:

- I'm wheezing
- My chest feels tight
- I'm finding it hard to breathe
- I'm coughing

Other medicines and devices (e.g spacer, peak flow meter) I use for my asthma every day:

2 When I feel worse:

My asthma is getting worse if I'm experiencing any of these:

- My symptoms are coming back (wheeze, tightness in my chest, feeling breathless, cough).
- I am waking up at night.
- My symptoms are interfering with my usual day-to-day activities (eg at work, exercising).
- I am using my reliever inhaler three times a week or more.
- My peak flow drops to below: .....

URGENT! If you need your reliever inhaler more than every four hours, you need to take emergency action now. See section 3.

What I can do to get on top of my asthma now:

If I haven't been using my preventer inhaler, I'll start using it regularly again or if I have been using it:

- Increase my preventer inhaler dose to ..... puffs .....times a day until my symptoms have gone and my peak flow is back to my personal best.
- Take my reliever inhaler as needed (up to .....puffs every four hours).
- Carry my reliever inhaler with me when I'm out.

URGENT! See a doctor or nurse within 24 hours if you get worse at any time or you haven't improved after seven days.

Other advice from my GP about what to do if my asthma is worse (eg MART or rescue steroid tablets):

3 In an asthma attack:

I'm having an asthma attack if I'm experiencing any of these:

- My reliever inhaler is not helping or I need it more than every four hours.
- I find it difficult to walk or talk.
- I find it difficult to breathe.
- I'm wheezing a lot, or I have a very tight chest, or I'm coughing a lot.
- My peak flow is below: .....

What to do in an asthma attack

1. Sit up straight - try to keep calm.
2. Take one puff of your reliever inhaler (usually blue) every 30-60 seconds up to 10 puffs.
3. If you feel worse at any point OR you don't feel better after 10 puffs **call 999 for an ambulance**.
4. If the ambulance has not arrived after 10 minutes and your symptoms are not improving, repeat step 2.
5. If your symptoms are no better after repeating step 2, and the ambulance has still not arrived, **contact 999 again immediately**.

Important: this asthma attack advice does not apply to you if you use a MART inhaler.

After an asthma attack

- If you dealt with your asthma attack at home, see your GP today.
- If you were treated in hospital, see your GP within 48 hours of being discharged.
- Finish any medicines they prescribe you, even if you start to feel better.
- If you don't improve after treatment, see your GP urgently.

What to do in an asthma attack if I'm on MART:

Green Zone:

This is the zone of good asthma control. Get to 'Know Your Normal' so you can start to recognise when your asthma is getting worse.
If your asthma is well controlled by taking your preventer inhaler regularly, you shouldn't have to use your blue inhaler.

Amber Zone:

WHAT might cause worsening symptoms?

WHAT are the triggers and how can you avoid them?

WHAT support are you getting to stop smoking and are they interested in help?

WHAT has been happening over the last 12 months? Have they been in hospital or been given a course of prednisolone?

How about you start to think that your blue rescue inhaler is like the blue light on an ambulance? A warning sign. i.e., if you are using your blue inhaler more than twice a week, you are more likely to end up needing an ambulance because your asthma is not well controlled and inflammation is building up. Equally, remember that it is important to always carry it around with you everywhere, as it will help you in an emergency while you wait to see your GP or for an ambulance to arrive.

If you are getting symptoms and having to use your rescue inhaler more than when you are in the Green Zone, THIS is when you need to speak to your GP or nurse, who can then establish whether or not you need prednisolone to prevent an asthma attack or hospital admission.

Red Zone:

In an emergency, when you are struggling to breathe, to talk, or your rescue inhaler is not working, you can use your inhaler up to 10 puffs every 30 seconds.

Talk them through the images of what to do in an emergency.

HOW does my patient take their inhalers and HOW do I know if they are taking them regularly?

At this point go back to the **Green zone** of the PAAP.

- **Inhalers**: What have they got with them and is there device consistency?
- **Adherence**: Discuss the prescription history and what 'ideal adherence' is.
- **Technique**: Check their inhaler technique. If not available, ask them to suck in 'Quick and Deeply'. If they can do this, they are suitable for a Dry Powder Inhaler (DPI), which is a lower-carbon option, and you may want to consider a swap if they have poor control and/or technique. Rather than criticising a poor technique, consider the following:

'That technique was not right for that device, BUT it was the perfect technique for a different device that you may be better suited to. Would you be interested in trying something different?'

Now demonstrate the inhaler technique either yourself or by showing a video. This is especially important if you are swapping to a different device.

Send the patient a link if they have internet access to a video – [scan the QR code to view the inhaler technique videos] see https://www.asthmaandlung.org.uk/living-with/inhaler-videos.

Your Time is UP

10 minutes may feel like a ridiculously short amount of time, and some of you reading this may be horrified that this is even being suggested. Unfortunately, though, this is the reality many of us are living with in general practice. We don't always have the luxury of time, and it is key that we maximise our time with our asthma patients and ensure the absolute key basics are covered and understood.

Patients should leave knowing:

- **WHY** they are taking their inhalers
- **HOW** to take them and
- **WHAT** to do if they have worsening asthma symptoms or an asthma attack.

Living with asthma is rarely a smooth journey. I believe, though, that it can and should be a lot smoother for our patients. It is our duty of care to ensure it is as smooth a journey as possible, starting them out on the right foot as they walk out of our door after diagnosis and down the right path going forward. We must minimise the speed bumps and the potholes, steer them away from the cliff edge, keep them on the right path, and guide or carry them when they need us most. We must support patients to accept their asthma, ensuring that they are not burdened by it, and spend our precious time at an asthma review wisely.

SIGNPOSTING TO VIDEOS AND INFORMATION YOU CAN SHARE WITH YOUR PATIENTS:-

https://www.nhs.uk/conditions/asthma/ - Includes a helpful video on how asthma affects the lungs

Asthma Action Plans for your patients -
https://www.asthmaandlung.org.uk/conditions/asthma/your-asthma-action-plan

Asthma and Lung UK Inhaler technique videos
https://www.asthmaandlung.org.uk/living-with/inhaler-videos

How **NOT** to do an asthma review – *a patient's experience of their asthma review*

For the last couple of years my annual asthma review has arrived in the form of a text message with a link to a webform to fill in – fine for those of us with the technology to do so. The text message states that the nurses will "only contact you if they need to arrange a further review over the phone or in person".

The online form asks a series of questions about the past four weeks, followed by a similar themed series of questions about the past twelve months. If the answers do not suit your required state, you can select the "other" option; however, you are limited to only 500 characters of written description, which is not ideal when trying to explain how you have been feeling or what it is that you require.

Towards the end, it does ask if you have an asthma action plan; however, it is simply a "yes" or "no" question, with no option to share any information on when you last had one, if you want one, or what you might find useful by having one.

Given that I have had serious life and health changes over the past two years with a new, non-respiratory-related serious chronic illness being diagnosed, I am surprised that I have not been called in to review my health and asthma situation and have a new asthma action plan created with me.

Filling out this asthma review form has not given me any confidence. I know that there is no longer an asthma nurse at my surgery and could only wish for an asthma review with the care, attention, and passion shown by the wonderful respiratory specialists at PCRS.

PCRS would like to thank AJ for sharing his experience.

PCRS pragmatic guide to caring for patients with asthma receiving biologic therapy

Will Carroll,[1] Ernie Wong,[2] Beverley Bostock,[3] Fiona Mosgrove,[4] Helena Cummings[5]

[1] University Hospital of the North Midlands, Stoke-on-Trent; [2] Imperial College Healthcare NHS Trust, London, UK; [3] Mann Cottage Surgery, Moreton-in-Marsh, UK; [4] Clinical Lead Grampian Respiratory Improvement Programme, Aberdeen, Scotland; [5] Hull University Teaching Hospitals NHS Trust, Hull Royal Infirmary, UK

This pragmatic guide focuses on the ongoing management of adults and children with severe asthma receiving biologic therapy and has been developed by an expert group led by Will Carroll, University Hospital of the North Midlands, Stoke-on-Trent and including Ernie Wong, Imperial College Healthcare NHS Trust, London, Beverley Bostock, Advanced Nurse Practitioner at Mann Cottage Surgery, Moreton-in-Marsh, and Asthma Lead for the Association of Respiratory Nurse Specialists, Fiona Mosgrove a GP in Aberdeen and Clinical Lead for the Grampian Respiratory Improvement Programme and Helena Cummings, Senior Respiratory Nurse Specialist and Severe Asthma Service Lead at Hull University Teaching Hospitals NHS Trust.

The development of this publication has been supported by an unrestricted educational grant from GSK. GSK has had no other input into the content other than to review this document for ABPI compliance.

Key facts:

- Around 5.4 million individuals – one in 12 adults and one in 11 children – are currently receiving treatment for asthma in the UK.[1]
- Around 200,000 people in the UK have severe asthma that does not respond to standard treatment.[2]
- Only around 1 in 5 patients with severe asthma who may be eligible for treatment with a biologic agent are currently receiving such therapy.[3]

Introduction

Severe asthma is defined by the European Respiratory Society (ERS) and the American Thoracic Society (ATS) as "*asthma which requires treatment with high-dose inhaled corticosteroids (ICS) in combination with a second controller medication and/or systemic corticosteroids to prevent it from becoming 'uncontrolled' or which remains uncontrolled despite this therapy*".[4] In the UK, around 4% of the estimated 5.4 million people diagnosed with asthma – approximately 200 000 people – meet these criteria and face the greatest risk for severe, life-threatening exacerbations of all people with asthma.[2,5–7] In fact, such is the burden imposed by severe asthma it is classed as a disability under the UK's Equality Act.[2]

Until relatively recently the only option for people with severe asthma was high-dose inhaled ICS in combination with one or more controller medications and repeated courses of oral corticosteroids (OCS).[4] Immunosuppressant therapy could also be considered for some people.[8] This meant that people diagnosed with severe asthma were faced not only with the risk of repeated and potentially life-threatening asthma attacks, but also with the additional risk to their health of repeated exposure to systemic OCS, including hypertension, diabetes, arthritis and osteopenia.[9–13] Healthcare systems also face additional costs to manage systemic OCS-induced morbidities.[9]

In the last decade, the picture has changed, especially for those with underlying demonstrable type 2 inflammatory process. Biologic agents that target underlying pathologic processes such as eosinophilia (elevated levels of circulating eosinophils) or 'damp down' inflammatory responses by inhibiting specific immune signalling pathways are now available. Five such agents have been approved for use in the UK as add-on maintenance therapy, benralizumab (Fasenra; AstraZeneca UK Ltd),[14] dupilumab (Dupixent; Sanofi Genzyme),[15] mepolizumab (Nucala; GSK),[16] omalizumab (Xolair; Novartis Pharmaceuticals)[17] and reslizumab (Cinqaero; Teva Pharmaceuticals)[18] (Table 1). A sixth biologic, tezepelumab (Tezspire; AstraZeneca) was approved in the European Union as an add-on maintenance treatment for the treatment of patients aged ≥12 years with severe asthma in September 2022 and is currently under review for use in the UK.[19] However, despite these potentially transformative medications' availability, only 1 in 5 patients with severe asthma who may be eligible for treatment with a biologic agent are currently receiving such therapy.[3] Moreover, the majority of referrals to secondary and specialist asthma services are reactive, taking place only once the patient has experienced several severe asthma exacerbations.

PCRS advocates a proactive approach to the identification of patients with potentially severe asthma. In 2020, we issued our first pragmatic guide for primary care on the management of patients with poorly controlled and severe asthma in which we outlined the triggers for referral to a severe asthma service.[8] In 2022, we expanded and updated our pragmatic guide on severe asthma to focus on the role of primary care in identifying those people with uncontrolled asthma, optimizing therapy and referring those still not well-controlled to specialist asthma services.[20] In our third pragmatic guide on the topic we focus on the role of primary care in managing patients diagnosed with severe asthma and who have been initiated on biologic therapy by specialist colleagues as they return to primary care for ongoing management.

Referral to specialist services in the UK

Biologic agents are prescribed in tertiary and some secondary care settings. However, before this can happen patients with severe asthma must be identified and referred to the appropriate specialist service. In 2021, a historical UK cohort study of data from the Optimum Patient Care Research Database and the UK Severe Asthma Registry found that 72% of adults with potentially severe asthma had no referral/specialist review in the past year.[7] The situation is no better, and more complicated, for children and young people, in whom definitions of severe asthma vary. In a survey of 219 healthcare professionals working in the UK, more than half of the GPs and almost three-quarters of general paediatricians reported adopting a higher threshold for specialist referral than the recommendations of the National Review of Asthma Deaths (See Box A).[21] Improving the rates of referral for patients with potential severe asthma and access to biologic therapies where appropriate is a key target for the NHS Accelerated Access Collaborative (AAC) under the Rapid Uptake of Products (RUP) programmes.

Box A: National Review of Asthma Deaths recommendations for referral to a specialist asthma service.

Patients with asthma must be referred to a specialist asthma service if:

- They have required more than two courses of systemic corticosteroids (oral or injected) in the previous 12 months OR
- They require management using British Thoracic Society (BTS) stepwise treatment 4 or 5 to achieve control

Available at: https://www.rcplondon.ac.uk/projects/outputs/why-asthma-still-kills. Accessed April 2023.

All patients with suspected severe asthma should be referred to a specialist asthma service for evaluation and, where appropriate, initiation of biologic therapy. In June 2022, the Oxford Academic Health Science Network (AHSN) published its consensus pathway for the management of uncontrolled asthma in adults (Figure 1).[22] The pathway lays out the roles and responsibilities of primary, secondary and tertiary care teams in identifying, diagnosing and delivering care for patients with suspected severe asthma. The role of primary care is to identify patients whose asthma is not well controlled and to determine whether this is due to poor adherence, incorrect inhaler technique, exposure to avoidable triggers, smoking or the effects of co-morbid conditions which can be optimised with current treatments. Smoking cessation support should be offered for those patients who continue to smoke. Once these reasons for poor symptom control have been ruled out those patients with possible severe asthma

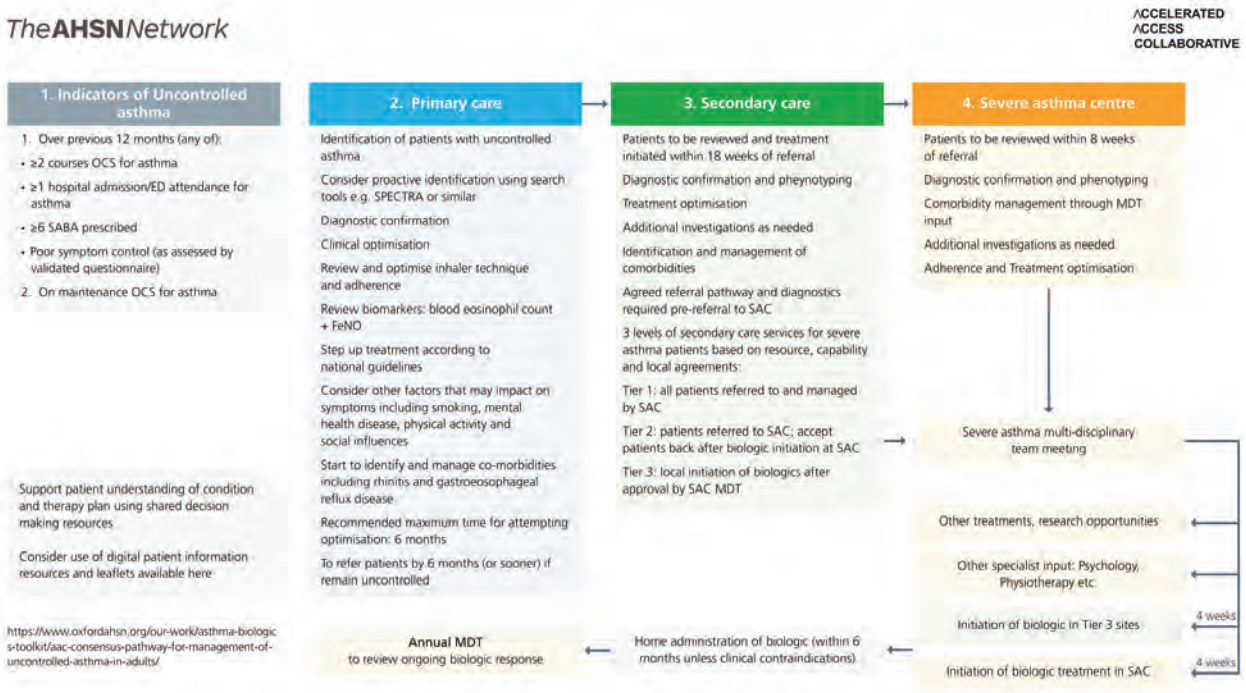
Table 1. Biologic agents approved for the treatment of severe asthma in the UK (as of April 2023).

Agent	Administration	Indication(s)	Eligibility criteria	Age group(s) and dose	Most common adverse effects
Benralizumab (Fasenra; AstraZeneca UK Ltd)[14]	Subcutaneous injection into the thigh or abdomen Pre-filled syringe	Add-on maintenance treatment of severe eosinophilic asthma inadequately controlled despite high-dose ICS + LABA	If blood eosinophils ≥300 cells/μL: ≥4 exacerbations in previous 12 months OR continuous OCS If blood eosinophils ≥400 cells/μL: ≥3 exacerbations in previous 12 months needing systemic CS	Adults (30 mg every 4 weeks for the first 3 doses and then every 8 weeks thereafter)	Headache, pharyngitis, pyrexia, injection site reactions, hypersensitivity reactions (urticaria and rash)
Dupilumab (Dupixent; Sanofi Genzyme)[15]	Subcutaneous injection into the thigh or abdomen Pre-filled pen	For patients not eligible for mepolizumab, reslizumab or benralizumab, or has asthma that has not responded adequately to these biological therapies as an add-on maintenance treatment of severe asthma with type 2 inflammation inadequately controlled with high dose (adults) or medium to high dose (children) ICS plus another medicinal product for maintenance treatment	Raised blood eosinophils (≥150 cells/μL), raised FeNO and ≥4 exacerbations in the last 12 months	Adults (initial dose of 400 mg followed by 200 mg every other week. For patients with severe asthma on OC, with comorbid moderate-to severe atopic dermatitis or severe chronic rhinosinusitis with nasal polyposis, initial dose if 600 mg followed by 200 mg every other week) Children ≥6 years of age (dose by body weight: 15–<30 kg, 100 mg every other week or 300 mg every four weeks; 30–<60 kg, 200 mg every other week or 300 mg every four weeks; ≥60 mg, 200 mg every other week)	Injection site reactions, conjunctivitis, arthralgia, oral herpes and eosinophilia *Safety warning issued in November 2022: risk of ocular adverse reactions*[a]
Mepolizumab (Nucala; GSK)[16]	Subcutaneous injection into the thigh or abdomen Pre-filled pen (for patients >11 years old) Pre-filled syringe	Severe eosinophilic asthma	If blood eosinophils ≥300 cells/μL: ≥4 exacerbations in previous 12 months OR continuous OCS If blood eosinophils ≥400 cells/μL: ≥3 exacerbations in previous 12 months needing systemic CS	Adults (100 mg every 4 weeks) Children ≥6 years of age (40 mg every 4 weeks)	Headache, injection site reactions (pain, swelling, erythema, pruritus) and back pain
Omalizumab (Xolair; Novartis Pharmaceutical)[17]	Subcutaneous injection into the thigh or abdomen Pre-filled syringe	Moderate to severe persistent allergic asthma (by positive skin test or in vitro reactivity to a perennial aeroallergen) not well controlled with ICS	IgE-mediated asthma Continuous or frequent OCS (≥4 courses in the previous 12 months)	Adults Children ≥6 years of age *Dose determined by baseline IgE and body weight with administration every 2 weeks*[17]	Headache and injection site reactions (pain, swelling, erythema, pruritus)
Reslizumab (Cinqaero; Teva Pharmaceuticals)[18]	Intravenous (administered in hospital)	Add-on therapy for severe eosinophilic asthma inadequately controlled despite high-dose ICS plus another medicinal product for maintenance treatment	Blood eosinophils ≥400 cells/μL ≥3 exacerbations in previous 12 months needing systemic CS	Adults *Dose determined by body weight with administration every 4 weeks*[18]	Increased blood creatine phosphokinase and anaphylactic reaction

[a] Most cases are mild but rare severe cases have been reported. Patients should be advised to be aware of and report ocular effects which should be promptly reviewed and treated or referred for urgent review in case of sudden vision changes or significant eye pain (NICE 2023).

CS, corticosteroid; ICS, inhaled corticosteroids; LABA, long-acting bronchodilator; OCS, oral corticosteroid.

Figure 1. AAC Consensus Pathway for the management of adults with uncontrolled asthma.[22]

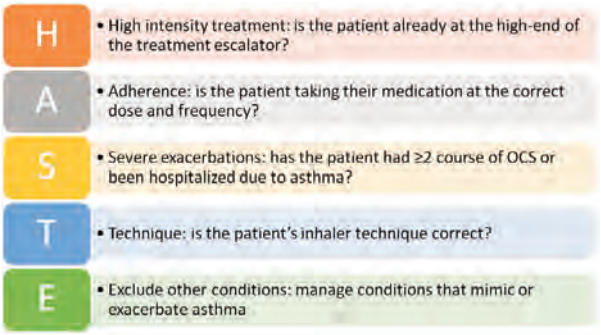


ED, emergency department; FeNO, fractional exhaled nitric oxide; MDT, multi-disciplinary team; OCS, oral corticosteroid; SABA, short-acting beta-agonist; SAC, severe asthma centre.

should then be referred for further evaluation.[20] The HASTE checklist provides a useful aide memoire to collate the key information that may indicate a referral for specialist evaluation is appropriate (Figure 2).

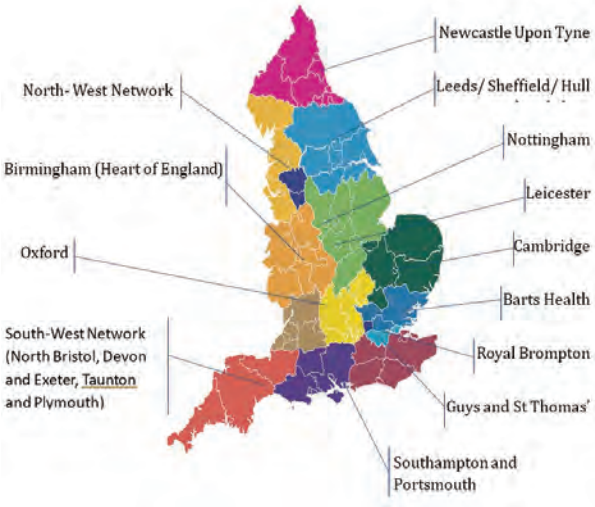
In 2021, recommendations were made to improve the referral process from primary to specialist care.[23] These include the direct referral of adults with suspected severe asthma to a severe asthma network (or service) by both primary and secondary care teams. There are currently 13 Severe Asthma Centres and network sites offering services for patients with severe asthma in England (Figure 3). The service models across these networks differ depending on the local population and facilities, although basic service provision criteria have been defined.[24] At present, the majority of referrals are made via secondary care teams, and

Figure 2. The HASTE checklist.[22]



OCS, oral corticosteroid.

Figure 3. Severe Asthma Centres and network sites offering services for patients with severe asthma in England.[22]



Reproduced from: https://www.oxfordahsn.org/our-work/respiratory/asthma-biologics-toolkit/severe-asthma-centres/ Accessed April 2023.

not all tertiary care specialist centres accept referrals direct from primary care (Table 2). In Wales, biologic therapy can be prescribed by respiratory specialists under the All Wales Adult Asthma Management and Prescribing Guideline.[25] In Scotland, an asthma secondary care service is in development to which patients with suspected severe asthma can be referred.[26] Plans for specialist severe asthma service provision in Northern Ireland are under review and there is a single regional service based in Belfast.

The pathway is less clear for children and young people.[27] Currently, severe asthma services for children in England are not formally commissioned and are only mentioned as part of the service specification for Paediatric Medicine. Many adult severe asthma networks do not offer a children's service, although some support adolescents as they transition to adult services (Table 2). As a result of this, the severe asthma service provided for children and young people by specialist respiratory centres varies between providers. Regardless, children and young people should be referred for tertiary-level review if, despite secondary care specialist review, the patient or their parents and the treating clinician agree that clinical improvement with optimal standard medication does not match expectations.[27] Put simply, a child or

Table 2. Severe Asthma Centres and network sites offering services for patients with severe asthma in England.

Severe Asthma Network	Nominated Centres	Contact
North West England and North Wales Network	Wythenshawe Hospital	https://mft.nhs.uk/wythenshawe/services/respiratory-and-allergy/asthma/
Birmingham and Regional Severe Asthma Service (Heart of England)	Heartlands Hospital, Russells Hall, New Cross, Sandwell: Birmingham City	https://hgs.uhb.nhs.uk/respiratory-medicine/
Oxford Special Airway Clinic	Oxford Centre for Respiratory Medicine, Churchill Hospital	https://www.ouh.nhs.uk/services/departments/specialist-medicine/respiratory-medicine/airway-clinic.aspx
South West Severe Asthma Operational Delivery Network	Somerset FT Plymouth Hospitals North Bristol (UHBW) Royal Devon and Exeter	https://www.england.nhs.uk/south/operational-delivery-networks/adult-medicine/severe-asthma-network/
Newcastle Upon Tyne	Newcastle Hospitals FT, Freeman Hospital. Royal Victoria Infirmary	https://www.newcastle-hospitals.nhs.uk/services/respiratory-service/complex-asthma/severe-asthma/
Leeds/Sheffield/Hull	Sheffield Teaching Hospitals NHS FT Leeds Teaching Hospitals NHS FT	https://www.leedsth.nhs.uk/a-z-of-services/respiratory-medicine/asthma/
Nottingham	Nottingham City Hospital	https://www.nuh.nhs.uk/severe-asthma-service/
Leicester (East Midlands Severe Asthma Service)	Glenfield Hospital, University Hospitals of Leicester NHS Trust	https://www.leicestershospitals.nhs.uk/aboutus/departments-services/respiratory-medicine/
East of England Severe Asthma Network	Cambridge University Hospitals NHS FT	https://www.cuh.nhs.uk/our-services/east-england-severe-asthma-network/
Barts Health (North Central and East London Severe Asthma Service)	Newham Hospital St Bartholomew's Hospital The Royal London Hospital Mile End Hospital Whipps Cross Hospital	https://www.bartshealth.nhs.uk/respiratory
Royal Brompton	Royal Brompton and Harefield Hospitals	https://www.rbht.nhs.uk/our-services/asthma-adults
Guys and St Thomas's	St Thomas' Hospital Guy's Hospital	https://www.guysandstthomas.nhs.uk/our-services/respiratory-medicine/clinics
Southampton, Portsmouth and Isle of Wight(Wessex Asthma Network)	University Hospitals Southampton and Portsmouth Hospitals NHS Trust	https://wessex-asthma.com/

FT, Foundation Trust.

young person with asthma who still fulfils the criteria for severe asthma despite secondary care involvement should be referred to either the local severe asthma service or the nearest tertiary paediatric respiratory centre for review and consideration of a biological treatment.

Examples of good pathways exist and the South Wales pathway is one such example. The South Wales Difficult Asthma Service for Children is based in the Children's Hospital for Wales, Cardiff and uses the Brompton paediatric difficult asthma protocol to evaluate and determine appropriate treatments including biologics.

Biologic therapy for severe asthma

There are currently five biologic agents approved for the treatment of severe asthma in the UK benralizumab (Fasenra; AstraZeneca UK Ltd),[14] dupilumab (Dupixent; Sanofi Genzyme),[15] mepolizumab (Nucala; GSK),[16] omalizumab (Xolair; Novartis Pharmaceutical)[17] and reslizumab (Cinqaero; Teva Pharmaceuticals)[18] (Table 1). Dupilumab, mepolizumab and omalizumab are licensed for use in adults and children aged ≥6 years.[15–17] Benralizumab and reslizumab are licensed for use in adults only.[14,18] Benralizumab, dupilumab, mepolizumab and omalizumab are administered via subcutaneous injection in the hospital or at home for confident, appropriately trained patients.[14–17] Reslizumab is administered in the hospital via intravenous injection every 4 weeks.[18]

All five agents are monoclonal antibodies and target different components of the immune system. Benralizumab, mepolizumab and reslizumab target interleukin5- (IL-5), a cytokine responsible for the growth, differentiation and activation of eosinophils, thereby reducing the production and survival of eosinophils. Dupilumab inhibits IL-4 through the Type 1 IL-4 receptor and IL-4 and IL-13 signalling through the respective Type 2 receptors. Omalizumab binds to immunoglobulin E (IgE) thereby inhibiting IgE-mediated inflammation. Given the different mechanisms of action, the eligibility criteria for each agent are slightly different and are summarized in Table 1. The requirement for oral steroids is an important consideration for all ages.

Defining a good response

Biologic therapies are maintenance therapy but should only be continued if a good response has been achieved. Criteria for a good response are shown in Box B.

Reducing OCS dependence

Patients with severe asthma eligible for biologic therapy are heavily dependent on OCS to maintain or regain control of their asthma symptoms. As shown in Box A, a key measure of success for patients receiving biologic therapy for severe asthma is a reduction in the dependence on OCS, although not all patients will be able to completely stop such treatment.[28] Benralizumab, dupilumab and mepolizumab have all been shown to reduce the daily dose of OCS in clinical trials.[29] For patients on continuous OCS, abrupt withdrawal of OCS should be avoided due to the risk of the emergence of adrenal insufficiency, instead the dose should be tapered gradually.[11] OCS tapering and assessment of adrenal sufficiency is most often supervised by the specialist team.

Box B: Defining a good response to biologic therapy for severe asthma.[22]

Good response at 6 months after initiation of biologic therapy by the specialist care team is defined as:

- Symptom improvement (e.g. ≥0.5 unit improvement in ACQ-6, AQLQ and/or ACT score)
- Reduction in OCS dose (e.g. >50%)
- Reduction in exacerbations and/or hospital admissions for asthma
- Patient expectations of improvement are met
- *Failure to meet these criteria should initiate an MDT review and consideration of switching or stopping biologic therapy*

Ongoing good response is defined as:

- No more than 1 severe exacerbation in preceding 12 months
- Sustained (or further) reduction in OCS dose

ACT, Asthma Control Test; ACQ-6, 6-item Asthma Control Questionnaire; AQLQ, Asthma Quality of Life Questionnaire; MDT, multidisciplinary team; OCS, oral corticosteroids.

Do they work in the 'real world'?

There is always a question when an entirely new medication is introduced as to how well they work in the 'real world' as opposed to the closely controlled setting of clinical trials. The answer to this question only comes once the medication has been in use for a period of time. The first such insights are now being reported for biologic agents for severe asthma in the UK.[30–34] In 2020, Joplin and colleagues reported a retrospective evaluation of 40 patients with severe asthma treated with a biologic agent in the UK.[31] The study found a statistically significant decrease in eosinophil count ($p \leq 0.0001$), the number of asthma exacerbations ($p \leq 0.0001$) and AQLQ score ($p=0.0002$) after 1 year of treatment. A numerical reduction in the mean long-term OCS dose was also reported although this did not reach statistical significance ($p=0.0724$).[31] In an international study of patients with severe

asthma treated with mepolizumab which included patients treated in the UK, exacerbation rates decreased and maintenance OCS doses were reduced, with 57% of patients able to discontinue OCS at 2 years.[30,33,34] A study focused on outcomes after 1 year of treatment with benralizumab for 139 patients with severe asthma reported similar results.[32]

Caring for patients with severe asthma receiving biologic therapy in primary care

Once prescribed a biologic agent, patients will continue to have direct access to their secondary or tertiary care team and will receive regular review. The majority of patients receiving biologic therapy, around 70% of adults and all children and young people, will remain under the care of the specialist team who will monitor their response to biologic therapy and adjust their treatment as necessary to achieve optimal symptom control.[24] This means that up to 30% of adults receiving biologics will be referred back to secondary and/or primary care for their ongoing asthma management. In addition, patients of all ages with severe asthma will require primary care support from healthcare professionals knowledgeable about their condition and treatment to deliver holistic care and support through the annual asthma review.

The role of primary care teams supporting patients with severe asthma will depend on the level of input from secondary and tertiary colleagues but may include conducting annual asthma and medication reviews, monitoring the ongoing response to biologic therapy and any emergent adverse events and monitoring and management of comorbid conditions.

An annual asthma review for patients with severe asthma receiving a biologic agent will be broadly similar to those for all asthma patients. Particular attention should be given to exposure to possible triggers, including environmental tobacco smoke. Where possible, family members should be offered assistance and support to stop smoking. The patient's written personalised asthma action plan should be checked and updated to ensure it remains in line with the recommendations from the specialist team. Peak expiratory flow rate (PEFR)-based symptom monitoring may be less useful to identify an impending exacerbation in patients with severe asthma.[6] Careful monitoring of symptoms and OCS use may be a better indicator for these patients.[6]

Biologic therapy does not replace maintenance asthma treatment. This means that an annual medication review to check adherence and inhaler technique should be conducted. A careful review of prescription records, any stockpiling of medications and a discussion about where and when asthma medications are being collected is vital. If non-adherence to prescribed preventer therapies is suspected communication between primary, secondary and tertiary care is essential. In addition, specific attention should be OCS use including daily dose for those still requiring continuous therapy and the number of courses in the previous 12 months for the treatment of exacerbations. An increase in daily symptoms, exacerbation rate, or OCS use may indicate a loss of asthma control and the need to re-refer to specialist colleagues for further evaluation (Box C).

Box C: Potential indicators of a need for re-referral to specialist services for patients with severe asthma managed in primary/secondary care.[22]

When compared to status at last MDT review:

- Reduction in symptom control (e.g. increase in ACT, ACQ-6 and/or AQLQ score)
- >1 severe exacerbation in the preceding 12 months
- Increase in daily average OCS dose

ACQ-6, 6-item Asthma Control Questionnaire; AQLQ, Asthma Quality of Life Questionnaire; MDT, multidisciplinary team; OCS, oral corticosteroids.

Most patients with severe asthma will have one or more comorbid conditions (e.g. rhinosinusitis, nasal polyposis) and risk factors for adverse health outcomes (e.g. obesity).[6] They may also have ongoing comorbid conditions as a result of long-term OCS exposure such as diabetes and osteopenia/osteoporosis.[6] Identification, management and monitoring of these conditions is an essential component of primary care for these patients.

Working with secondary/tertiary care colleagues to ensure holistic care

The AAC Consensus Pathway for the management of adults with uncontrolled asthma (Figure 1) recommends that local healthcare systems consider implementing an integrated care model with the formation of a respiratory multidisciplinary team (MDT) that includes a Respiratory Consultant, Specialist Nurse, Practice Nurse, General Practitioner, District Nurse and Pharmacist.[22] The role of the MDT will include:

1. Early identification of patients with suspected severe asthma and streamlining specialist referral after primary care optimisation,
2. Monitoring of patients on biologic therapy.

The MDT allows for a clear line of communication between primary and specialist care, avoiding the usual waiting time for outpatient appointments. The setup of MDT will differ according to local needs and capacity. However, Box D provides general guidance.

Box D: Guide for virtual severe asthma MDT set up.

When compared to status at last MDT review:

- Define MDT size (choose between single PCN/multiple PCN.
- Involve the wider primary care team including Pharmacists and Practice Nurses who have vital roles in monitoring patients.
- Set aside dedicated time for MDT members to attend (e.g. one hour every 2 weeks)
- Consider the use of a severe asthma identification tool and referral template.[35]
- Include education package as part of MDT for long-term practice improvement

MDT, multidisciplinary team; PCN, primary care network.

Conclusions

In 2019, a systematic review of the experience of individuals living with a diagnosis of severe asthma served as a stark reminder of the fundamental impact the disease, the lifestyle adjustments and the medication regimen required to deal with symptoms can have.[36] The review looked specifically at the lived experience of adults with severe asthma. Patients described a need to regain self-control and a sense of self-worth and to "*gain control and power over their condition*". Patients also expressed a desire for a partnership with their healthcare providers when making decisions about their treatment based on the trust established with a knowledgeable physician. These insights highlight the impact of severe asthma on an individual's sense of self and the need for a holistic and shared approach to their care. Achieving optimal care for patients with severe asthma requires their timely identification and referral for specialist review, input from secondary and tertiary care colleagues to ensure the diagnosis is correct and initiating them on appropriate medication and ongoing care from primary care to ensure all their healthcare needs are addressed.

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Pragmatic Guidance

Continue to offer an annual asthma review for all patients with severe asthma including those receiving biologic therapy.

- Ensure the reduction in annual exacerbation rate is maintained
- Include ACT, ACQ-6 or AQLQ evaluation and ensure improvement is maintained
- Review OCS dose and ensure dose is maintained or lower than previous annual review
- Assess adherence to ALL asthma medications

Ensure all patients with severe asthma receiving biologic therapy have an up to date personalised asthma action plan.

Document any comorbidities and ensure they are adequately controlled.

Document smoking status and offer smoking cessation support.

References
1. Asthma+Lung UK. What is asthma. Available at: https://www.asthmaandlung.org.uk/conditions/asthma/what-asthma. Accessed April 2023.
2. Asthma+Lung UK. What is severe asthma. Available at: https://www.asthmaandlung.org.uk/conditions/severe-asthma/what-severe-asthma. Accessed April 2023.
3. NHS AAC. Asthma biologics – rapid uptake product. 2021. Available at: https://www.england.nhs.uk/aac/what-we-do/what-innovations-do-we-support/rapid-uptake-products/asthma-biologics/. Accessed April 2023.
4. Chung KF, et al. International ERS/ATS guidelines on definition, evaluation and treatment of severe asthma. Eur Respir J 2014;43:343–73.
5. Asthma+Lung UK. Living in Limbo. Last updated 2019. Available at: https://www.asthma.org.uk/support-us/campaigns/publications/living-in-limbo/. Accessed April 2023.
6. Jones TL, et al. Diagnosis and treatment of severe asthma: a phenotype-based approach. Clin Med (Lond) 2018;18(Suppl 2):s36–s40.
7. Ryan D, et al. Potential severe asthma hidden in UK primary care. J Allergy Clin Immunol Pract 2021;9:1612–23.
8. Holmes S, et al. Poorly controlled and severe asthma: triggers for referral for adult or paediatric specialist care – a PCRS pragmatic guide. 2020. Available at: https://www.pcrs-uk.org/resource/triggers-referral-poorly-controlled-and-severe-asthma. Accessed April 2023.
9. Barry LE, et al. The cost of systemic corticosteroid-induced morbidity in severe asthma: a health economic analysis. Respir Res 2017;18:129.
10. Bleecker ER, et al. Systemic corticosteroids in asthma: A call to action from World Allergy Organization and Respiratory Effectiveness Group. World Allergy Organ J 2022;15:100726.
11. Gurnell M, et al. Long-term corticosteroid use, adrenal insufficiency and the need for steroid-sparing treatment in adult severe asthma. J Intern Med 2021;290:240–56.
12. Heatley H, et al. Observational UK cohort study to describe intermittent oral corticosteroids prescribing patterns and their association with adverse outcomes in asthma. Thorax 2022;Online ahead of print.
13. Humbert M, et al. Reducing the hidden burden of severe asthma: recognition and referrals from primary practice. J Asthma 2021;58:849–54.
14. Benralizumab UK SmPC. 2022. Available at: https://www.medicines.org.uk/emc/product/8918/smpc#gref. Accessed April 2023.
15. Dupilumab UK SmPC. 2023. Available at: https://www.medicines.org.uk/emc/product/11321/smpc#gref. Accessed April 2023.
16. Mepolizumab UK SmPC. 2022. Available at: https://www.medicines.org.uk/emc/product/1938/smpc#gref. Accessed April 2023.
17. Omalizimab UK SmPC. 2021. Available at: https://www.medicines.org.uk/emc/product/4725/smpc#gref/ Accessed April 2023.
18. Reslizumab UK SmPC. 2021. Available at: https://www.medicines.org.uk/emc/product/4370/smpc#gref. Accessed April 2023.
19. NICE. Tezepelumab for treating severe asthma [ID3910]. Available at: https://www.nice.org.uk/guidance/indevelopment/gid-ta10796. Accessed April 2023.
20. Holmes S, et al. Severe asthma – A pragmatic guide for primary care practitioners. 2022. Available at: https://www.pcrs-uk.org/resource/severe-asthma-pragmatic-guide-primary-care-practitioners. Accessed April 2023.
21. Carroll W, et al. If it's 'only' asthma, why are children still dying? Arch Dis Child 2020;105:494–8.
22. Academic Health Sciences Network. Rapid Uptake Products Asthma Biologics: AAC Consensus Pathway: Management of Uncontrolled Asthma in Adults, June

2022. Available at: https://www.oxfordahsn.org/wp-content/uploads/2022/06/AAC-Pathway-16.9_FINAL-No-NHS.pdf. Accessed April 2023.
23. Jackson DJ, et al. Recommendations following a modified UK-Delphi consensus study on best practice for referral and management of severe asthma. BMJ Open Resp Res 2021b;8:e001057.
24. NHSE. Specialised respiratory services. Service specifications. 2017. Available at: https://www.england.nhs.uk/wp-content/uploads/2017/04/specialised-respiratory-services-adult-severe-asthma.pdf. Accessed April 2023.
25. All Wales Medicines Strategy Group. All Wales Adult Asthma Management and Prescribing Guideline. December 2021. Available at: https://awttc.nhs.wales/files/guidelines-and-pils/all-wales-adult-asthma-management-and-prescribing-guideline-pdf/. Accessed April 2023.
26. TEC. Asthma Secondary Care. Available at: https://tec.scot/programme-areas/connect-me/connect-me-clinicians/pathways/asthma-secondary-care. Accessed April 2023.
27. NHSE. National bundle of care for children and young people with asthma. Available at: https://www.england.nhs.uk/publication/national-bundle-of-care-for-children-and-young-people-with-asthma/. Accessed April 2023.
28. Sferrazza Papa GF, et al. Role and challenges of severe asthma services: insights from the UK registry. Minerva Med 2017;108(3 Suppl 1):13–7.
29. Agache I, et al. Efficacy and safety of treatment with biologicals (benralizumab, dupilumab, mepolizumab, omalizumab and reslizumab) for severe eosinophilic asthma. A systematic review for the EAACI Guidelines – recommendations on the use of biologicals in severe asthma. Allergy 2020;75:1023–42.
30. Harrison T, et al. Real-world mepolizumab in the prospective severe asthma REALITI-A study: initial analysis. Eur Respir J 2020;56:2000151.
31. Joplin H, et al. The real-world effectiveness and effect on adherence with inhaled asthma therapy of 1 year of severe asthma monoclonal antibody treatment. Eur Respir J 2020;56(Suppl 64):2267.
32. Kavanagh JE, et al. Real-world effectiveness of benralizumab in severe eosinophilic asthma. Chest 2021;159:496–506.
33. Pilette C, et al. REALITI-A Study: Real-World Oral Corticosteroid-Sparing Effect of Mepolizumab in Severe Asthma. J Allergy Clin Immunol Pract 2022;10:2646–56.
34. Caruso C, et al. International, prospective study of mepolizumab in severe asthma: REALITI-A at 2yrs. Abstract presented at ERS; 4-6 September 2022; Barcelona, Spain
35. AHSN. Identifying patients with uncontrolled asthma. Available at: https://www.oxfordahsn.org/our-work/respiratory/asthma-biologics-toolkit/identifying-patients-with-uncontrolled-asthma/. Accessed April 2023.
36. Eassey D, et al. "…I've said I wish I was dead, you'd be better off without me": A systematic review of people's experiences of living with severe asthma. J Asthma 2019;56:311–22.

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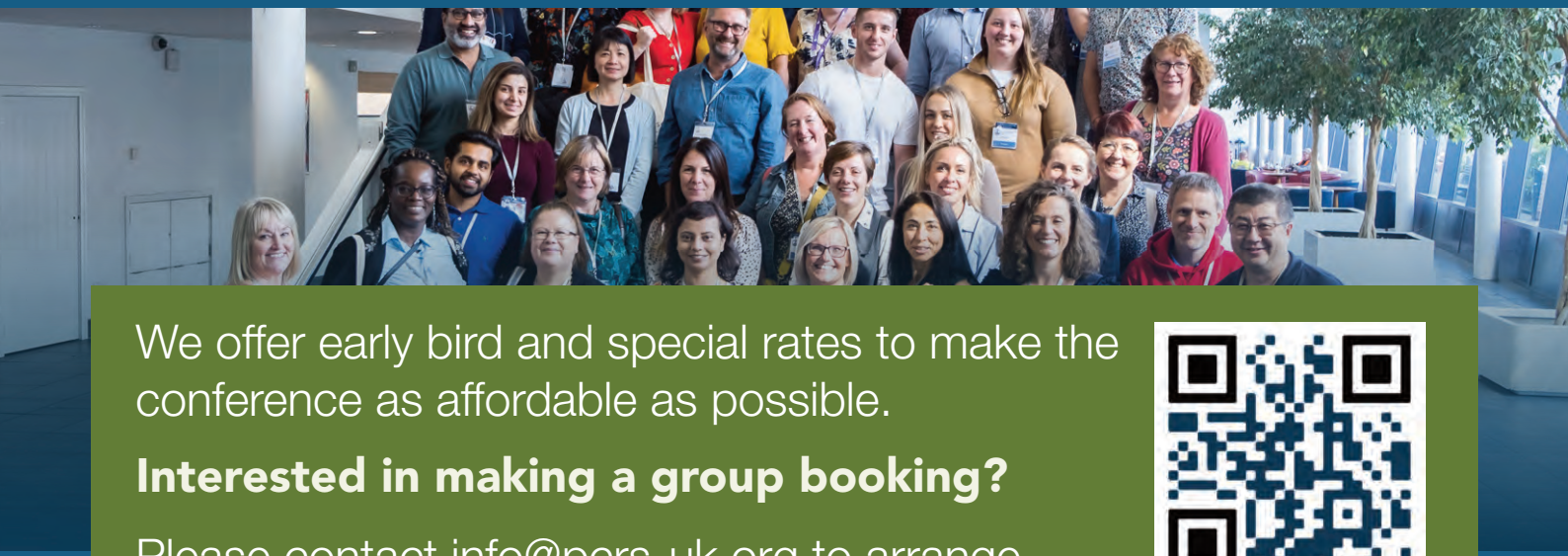

We offer early bird and special rates to make the conference as affordable as possible.

Interested in making a group booking?

Please contact info@pcrs-uk.org to arrange.

If you are struggling to afford the delegate fee, please contact us info@pcrs-uk.org.

The conference has been instigated and organised by PCRS. Sponsors have contributed funding towards this event in return for exhibition space. They have had no input into the agenda or the selection of speakers with the exception of any sponsored symposia which are clearly indicated.

My Asthma Story

The PCRS Patient Reference Group (PRG) is a small group of people with respiratory conditions who support PCRS to ensure that we always try to embed the patient perspective in our work and consider the holistic management of patients. Our PRG members sit on our regular committees and sub-committees and contribute regularly to our work. We are grateful for their input. We have two representatives who sit on our valuable PRG who suffer from asthma. Here's their story:

Benedict Greenwood

My asthma story is fairly typical. I've made bad decisions. At times, I've been neglected by healthcare services. But I've also been supported by some brilliant healthcare professionals to learn how to manage my condition better.

I've had asthma since I was a baby. When I was a small child, it was pretty bad, especially in the winter and whenever I had a respiratory tract infection. My parents had many sleepless nights helping me when I woke up coughing and spluttering. Looking back now, they say those nights were pretty scary. No parent wants to see their child struggling to breathe, especially not on a regular basis.

Fortunately, as I grew, my asthma got better and better. I was a very active child, and asthma never got in the way of me playing sports or doing outdoor activities. My inhaler dosing went down to once a day, and at some point in my teens, I stopped taking them completely. I decided that I had "grown out of my asthma". Since I only felt wheezy when I got a respiratory infection and I only had coughing fits on the rare occasion I breathed in strong fumes, I decided I didn't have asthma anymore. I didn't take my inhalers for several years and went unchallenged by healthcare professionals. After all, I wasn't being called for asthma check-ups, and when I went to university, I wasn't contacted by my GP about anything. It was as if I had disappeared from the system.

It took an excellent healthcare professional to take control of the situation when I was 21 and show me that my current habits weren't OK. They explained to me why I still needed to take my inhaler every day even when I felt fine, but they also had a solid, evidence-based put-down for all the excuses and beliefs that I gave for not managing my asthma! They didn't blame me; they just demonstrated to me that I still have asthma and explained why each bit of asthma care was important. It wasn't medications or an exacerbation that made me change my ways; it was the healthcare professional setting aside a good chunk of time to go through the basics of asthma with me.

Nowadays, I consider myself a model of asthma self-management. However, at each asthma appointment or trip to the pharmacy, there's usually something that the healthcare professional can remind me about that will help my asthma, such as taking hay fever tablets in the summer or getting a flu vaccination in the autumn. Even though my self-management is now pretty good, healthcare professionals regularly help me make it just that little bit better.

I have heard people say that patient education doesn't work. I couldn't disagree more.

Amanda Roberts

Firstly, I would like to say that I have a wonderful life. While my asthma has been lifelong, in recent years medication has kept it on a fairly steady course. I was regularly hospitalised until well after the birth of my second child, but something must have changed. Not really any idea what.

Like many people with asthma, I also have hay fever and eczema. It always puzzled me why I struggled to get health care professionals to take my eczema seriously. Somehow, it was always in the shadow of my asthma. And, actually, it was my skin that had the most impact on my quality of life.

My dissatisfaction with the annual asthma reviews I have had is legendary. I long to know more about current medication options and evidence. Long-term use of topical corticosteroids is known to cause skin thinning and other side effects. So now the standard advice seems to be that control for skin conditions should be maintained with five days of treatment and then two days off ("weekend therapy"). I have been using inhaled steroids without any breaks for years and years. What on earth has this done to my lungs?

I know plenty of asthma patients have difficult journeys. Those who have the luck to be treated by PCRS members are in the minority. We need more of you!

PCRS News round-up

RESPIRATORY LEADERS

This year sees the return of our highly respected respiratory leadership course. We are delighted to welcome back facilitator Catherine Blackaby, who will be supporting our face-to-face event in June. Free of charge to members, this course provides a fantastic opportunity for you to grow in confidence, overcome workplace isolation, and understand and develop your leadership skills. It dovetails with the PCRS conference compassionate leadership stream and helps you to lead and drive high-functioning teams. 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 seen a number of changes to our executive and sub-committees composition. This year we have welcomed Bev Bostock to the PCRS Executive and also welcomed, for a further term of office, Daryl Freeman, Ren Lawlor, and Vince Mak. Our thanks go to Dominika Froehlich-Jeziorek, who completed her term of office this year. We have also welcomed Dhiren Dayal and Sian Jones to our education committee, Michelle O'Driscoll and Lizzie Williams to our service development committee, Daryl Freeman, Maisun Elftise, Helen Ashdown, and Dhiren Dayal to our Policy Forum, and Kay Hughes to our Respiratory Leaders Programme Board. We would like to thank and acknowledge the hard work of all our committee members and trustees, both past and present. Without the hard work and dedication of these inspiring and talented individuals, we would not be able to deliver the work that we do.

If you are interested in getting more involved with the organisation, why not consider applying for one of our committees in 2023.

ONLINE LEARNING MODULES

We are delighted to be able to offer members of PCRS a new learning opportunity with the introduction of a series of online learning modules. The first three modules provide an introduction to delivering greener, kinder respiratory care. Members can access them free of charge directly through their member dashboard. Each module features some text to read and a short video, which is followed by a series of short 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, in learning and developing their respiratory knowledge. To access your dashboard, simply login to the PCRS website.

PCRS PODCASTS

PCRS has over 25 podcasts available to members. Our podcasts cover a range of subjects, from asthma in children and young people to managing COPD and Interstitial Lung Disease. Topical podcasts you may wish to tap into include our series on One Airway, which explores the concept of one airway: one disease (https://www.buzzsprout.com/1490989/episodes/12547549), the differential diagnosis of allergic rhinitis (https://www.buzzsprout.com/1490989/episodes/12547551), and the treatment of allergic rhinitis (https://www.buzzsprout.com/1490989/episodes/12584605).

We also have a podcast on fitness to fly (https://www.buzzsprout.com/1490989/episodes/12352890), which is an important factor as we head into the holiday season.

PCRS ASTHMA MYTHS

Despite the reality of high asthma death rates in the UK, many asthma myths continue to exist, which means that many people do not take their condition seriously. Our fantastic series of short animations helps to dispel the myths around asthma and highlight the importance of appropriate and effective management and trigger avoidance, as well as preventing over-reliance on SABA inhalers.

Use it to help your team learn about asthma myths, and you may even want to share it with your patients.

POPULATION BASED RESPIRATORY HEALTH

Developed by the PCRS Service Development Committee, the Respiratory Service Framework (RSF) helps those looking to design a patient-focused respiratory service working across all sectors of out-of-hospital care to see the ideal components for a given population of patients. It has been designed to be applicable and helpful to those delivering care at a PCN or ICS level.

Find out more at https://www.pcrs-uk.org/respiratory-service-framework. A range of tools, including a work-force calculator and helpful videos, provide guidance on how the framework can be used.

Submit an abstract to the PCRS Conference

Showcase your work, disseminate your findings and share best practice by submitting an abstract to PCRS 2023.

Scientific research

We welcome quantitative and qualitative research across the spectrum, from systematic reviews and database studies through to clinical trials and implementation studies. Abstracts on work in progress and study protocols are also welcome.

Best practice and service development

Whether you have implemented guidelines, done the basics well, or developed an innovative approach to delivering respiratory care, share your work so that other healthcare professionals can learn from your experiences.

Abstract awards

Prizes will be awarded for overall best abstract and the most patient-centred poster. Awards will be made for the best designed and presented abstract and the best original research poster.

Abstract submissions are open until 30th June 2023

Scan to learn more and submit your abstract.

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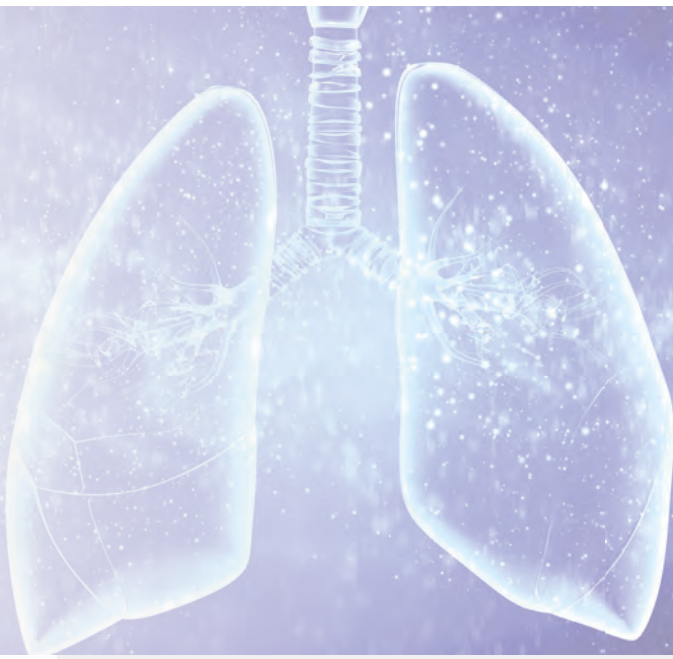
npj | primary care respiratory medicine

Call for Papers



npj Primary Care Respiratory Medicine is an open access, online-only, multidisciplinary journal dedicated to publishing high-quality research in all areas of the primary care management of respiratory and respiratory-related allergic diseases. Papers published by the journal represent important advances of significance to specialists within the fields of primary care and respiratory medicine. We are particularly interested in receiving papers in relation to the following aspects of respiratory medicine, respiratory-related allergic diseases and tobacco control:

- Epidemiology
- Prevention
- Clinical care
- Service delivery and organisation of healthcare (including implementation science)
- Global health

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