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Primary Care Respiratory **UPDATE**




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HIGHLIGHTS …

Asthma Guidelines in Practice

Respiratory tract infections and antibiotic prescribing

Appropriate use of rescue packs

Stepping down ICS in COPD

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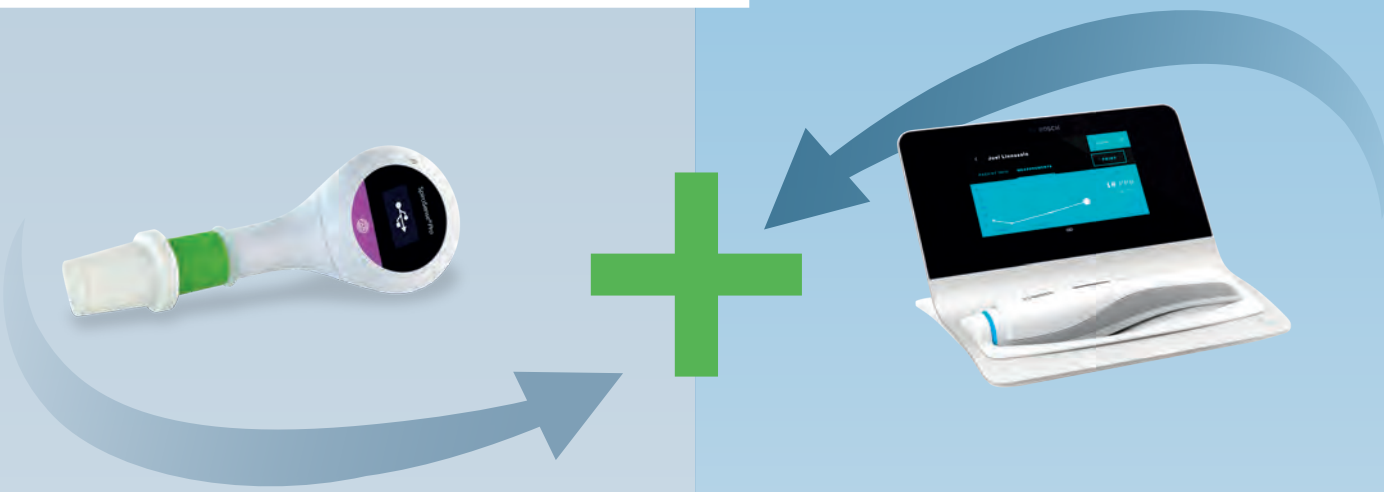

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[1] Friedrich P., College for Applied Sciences, Faculty of Electrical Engineering, Kempten, Internal Report 2014
[2] Dormeyer C et al 2014, Allergologie, 37(4), 1613
[3] NICE Guideline Asthma: diagnosis, monitoring and chronic asthma management (2017)
[4] SIGN 153: British Guideline on the management of asthma (2016)

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Editorial Office and Publishers

Primary Care Respiratory Society UK
Miria House,
1683B High Street,
Knowle, B93 0LL
Tel: +44 (0)1675 477600
Fax: +44 (0)1361 331811
Email: sales@pcrs-uk.org

Advertising and sales

Primary Care Respiratory Society UK
Miria House,
1683B High Street,
Knowle, B93 0LL
Tel: +44 (0)1675 477600
Fax: +44 (0)1361 331811
Email: sales@pcrs-uk.org

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For further information, contact:
Primary Care Respiratory Society UK
Miria House,
1683B High Street,
Knowle, B93 0LL
Tel: +44 (0)1675 477600
Fax: +44 (0)1361 331811
Email: sales@pcrs-uk.org

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Telephone: +44 (0)1675 477600 Facsimile: +44 (0)121 336 1914
Email: info@pcrs-uk.org Website: http://www.pcrs-uk.org

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Primary Care Respiratory **UPDATE**




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REGULAR FEATURES

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Editor's Round-Up

Dr Iain Small, *Editor Primary Care Respiratory Update*

Welcome to the Spring 2018 edition of *PCRU*. Having had a period of time away from work, it is a great pleasure to be back in the surgery and at the desk. I am grateful to Carol Stonham for stepping in to edit the last edition and, as ever, to the team at *PCRU* for their support. Thanks also to the many colleagues who offered good wishes and support during my illness and recovery.

This edition sees a focus on antibiotics – a hardy perennial topic that requires regular re-visitation. Whether for respiratory infections or as part of rescue pack use, I hope that the practical guidance given, together with the views of patients, will support your decision-making in practice. Speaking of rescue packs, Dr Vince Mak and your editor get into an interesting discussion prompted by a question from the 2016 PCRS-UK conference on the ubiquitous use of oral corticosteroids in COPD.

It seems to me that we have a growing problem with conflicting clinical guidance, with multiple guideline writers promoting different strategies in the same patients. PCRS-UK has invited an expert group, led by Dr Luke Daines, to try to give practical advice to those of us trying to understand not only our patients' needs, but also the evidence. I would commend his piece to you all. It may not give all the answers, but it will help you to understand why different recommendations have been made.

Whilst on the subject of 'understanding conflicting evidence', we at PCRS-UK are aware that the thorny issue of when to withdraw inhaled corticosteroids in patients with COPD is of pressing importance to members. In an effort to support clinical decision-making, the editorial team at *PCRU* has agreed to publish the IPCRG's guide to this process. As editor, I would point out that the use of drug doses not licensed in the UK are included in the piece, and that the evidence supporting this kind of action is still a work in progress, so advice may change in future.

We also have a new feature in *PCRU* this time, featuring case-based learning. In "What else can it be?", Dr Steve Holmes explores a diagnostic dilemma and invites you to meet Doug. Exploring the issues discussed in 'Supported Self-Management' introduced by Dr Noel Baxter, we turn to the case of Chelcie, a 7-year-old with asthma.

Finally, along with the usual excellent round-up of Policy, Conference and Respiratory Leaders news, we have a new approach to Journal Watch this time round. There is some fantastic work on exercise and rehabilitation from across the globe (and at home) to look at, along with a diverse range of respiratory-related research.

Your Editor's Choice, though, comes from St Andrews, where William E Stephens (*Tobacco Control* 2018;**27**:10–17) reports on the potential carcinogenicity of differing e-cigarette designs – information to draw on without doubt.

SUMMER MEETING 2018

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Better lung health for all

Chair's Perspective: Influencing change

Noel Baxter, *PCRS-UK Executive Chair*

It is spring finally and whilst I wouldn't want to suggest for one minute that we are now experiencing the end of winter pressures in the NHS there will hopefully be some time for reflection on why it happened and is there anything we need to do more or less of and is there anything we should stop or start doing. I am going to steer clear of the funding and resource arguments as that is well discussed elsewhere but focus on how the respiratory interested community whom we represent here at PCRS-UK can take the opportunity to support colleagues wanting to or having responsibility to find some solutions for the winter pressures problem in 2018/2019.

Many of us will have been championing better respiratory care for some years whether to clinical colleagues, our commissioners, or through writing business cases to managers within our organisations. What we will have found is that whilst our ideas will have been received positively, the priorities and national mandates influencing their decision making may have been coming from other areas such as cardiovascular disease and diabetes. So, we have lobbied and done what we can whilst we wait for our time to come.

As this winter has drawn on, I hope many of you will have seen these colleagues now seeking you out to go back over that pitch you made to them at some point in the past, I certainly have. Those solutions you suggested, they now wonder might make a difference to the 4 hour waits in ED, the increasing backlog of people waiting for routine operations and those busy Monday respiratory infection and exacerbation surgeries. So maybe it's time to unpack those service specifications, put plans on pages and slide sets or show at a practice meeting those asthma action plans and consultation templates. Could it be time to speak with your community colleagues about working together for better flu vaccination rates?

It seems that we are now in a place where the respiratory voice may be heard more clearly. As well as respiratory drivers causing NHS winter surges we also now have the RightCare programme for CCGs in the NHS in England (https://www.england.nhs.uk/rightcare/) with other countries also exploring value based healthcare opportunities in respiratory. Indeed, I met the National Clinical Director for Respiratory Services in England in recent weeks – Mike Morgan, whom I have never heard speak so positively about it now being the time for the respiratory voice.

Where should we now look for the evidence, measures and outcomes to make our case as robust as it can be? On December 19th 2017 the *Lancet Respiratory* published "Planning ahead to avert a respiratory winter avalanche"[1] where it calls for a focus on reducing infections and exacerbations. Clearly mid-December is too late to start planning for that winter but we can start to do something about it now. They make a call for (supported by data from the BLF "Out in the Cold"[2] winter report) a focus on training and reviews and planning in the relative downtime of the spring and summer, more self-management and good quality diagnosis communicated well to people with long term respiratory illness. These areas of focus fortunately align with the key campaign issues we have been working on since 2015 and so you will find a wealth of material not least in the last two issues of *Primary Care Respiratory Update* to provide guidance.

In this issue of *Primary Care Respiratory Update* we look at managing infections responsibly. Not too many, but early enough antibiotics in the right people and in those with long term conditions who feel supported to do so. We read also that yes, we need rescue packs, this could help but are these thoughtfully and responsibly issued? Value based care and Right Care are not just about prescribing the right thing i.e. the prednisolone dose, the inhaler drug

class, but also the right information, the right technique.

To help us ride the crest of this particular respiratory wave we have joined the BLF led "Taskforce for Lung Health" (https://www.blf.org.uk/taskforce-consultation) along with other patient and professional stakeholders. This programme aims to gather the latest best evidence on those interventions that will make the most difference soonest and then communicate this to motivate people to drive change. The taskforce is currently calling for evidence and I have certainly been informing the team about chronic breathlessness,[3] an area that respiratory colleagues are taking a lead on but is cross-cutting amongst many specialist areas and is often unrecognised. My hope is that recognising and acting on this important symptom earlier than we are doing will make a difference to people's lives and help manage the NHS burden.

The PCRS-UK cause (https://pcrs-uk.org/pcrs-uk-cause) suggests that sometimes respiratory medicine just isn't taken seriously enough but things maybe now are beginning to change. One thing that struck me reading through the material in this issue was that we struggle to connect with our non-respiratory focused colleagues because of a lack of agreement and 'exactness' about the tests we can do to help make respiratory diagnoses. I won't reprise here the NICE asthma diagnosis guideline[4] as Luke Daines provides the perfect advice in his diagnosis and treatment article (see pages 9-14) however in this edition we continue to see debate about whether it really helps and how affordable will be the desktop CRP, and is the blood eosinophil test really the game changer in diagnosis of airways disease?

If you are wondering this year how you can take part in respiratory quality improvement (QI) then maybe look again at the results and materials of the National COPD Audits in England And Wales and in these resources for primary care(See goo.gl/xJCQiC) we suggest specific tests of change that are easily doable by anyone in practice. Watch out this year for the new national COPD and adult and child asthma audit programme (see goo.gl/nRyqng) with the first results being analysed early summer and published late autumn. Maybe make a head start by ensuring you are using the right codes in your consultation templates so you know you are measuring the right things and can see your improvement locally and response to your test of change. If you want to know more about QI and speak to colleagues, the conference this September will be highlighting how to do this.

It is time to show leadership, whether in your team or practice or wider in your organisation. The resources are out there and the PCRS-UK community has the networks to help you (see https://pcrs-uk.org/clinical-leadership-programme). Let's look forward to change for better for people with respiratory disease.

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Asthma Guidelines in Practice – A PCRS-UK Consensus

Asthma Guidelines in Practice – A PCRS-UK Consensus was commissioned to provide clarity on aspects of diagnosis, management and monitoring of asthma that are uncertain due to differences between current national guidelines. The article has been written by Dr Luke Daines (GP and Academic Clinical Fellow, University of Edinburgh), in conjunction with GP colleagues, Duncan Keeley, Kevin Gruffydd Jones, Steve Holmes and nurse colleagues, Val Gerrard and Carol Stonham. It is based on the recently published PCRS-UK briefing paper (see https://pcrs-uk.org/sites/pcrs-uk.org/files/BriefingAsthmaGuidelines_V3.docx). This article focuses on mild/moderate asthma, for severe asthma please see British Thoracic Society/Scottish Intercollegiate Guideline Network. 2016. British Guideline on the Management of Asthma. Available from: http://www.sign.ac.uk/assets/sign153.pdf

Introduction

Asthma is a chronic respiratory condition affecting an estimated 5.4 million people in the UK.[1] Individuals with asthma suffer from wheeze, shortness of breath, cough and chest tightness, limiting everyday activities and fulfilment of roles at home and work.[2]

In the UK, public sector spending for asthma exceeds £1.1 billion each year, with the majority of costs (74%) arising from prescriptions and the estimated 6.4 million primary care consultations that occur each year.[3] Evidence-based management can maintain good day-to-day control for most people with asthma and substantially reduce the risk of asthma attacks.[2]

UK specific national guidelines for asthma management are now available from two sources: the National Institute for Health and Care Excellence (NICE) and British Thoracic Society / Scottish Intercollegiate Guideline Network (BTS/SIGN).[2,4] Whilst the BTS/SIGN guideline covers all aspects of asthma care, the NICE guideline concentrates on diagnosis, monitoring and chronic management. Although broadly similar in methodology, NICE include a thorough health economic evaluation, which other guidelines do not.[4] Subsequently differences in management recommendations can occur if there is little or no clinical difference between interventions.

Recommendations for the diagnosis of asthma also differ between NICE and BTS/SIGN guidelines.[2,4] Achieving a clear consensus for the best diagnostic strategy for asthma is a particular challenge as on top of economic and implementation considerations, the definition of asthma is also evolving.[4] Traditionally a diagnosis of asthma was based on symptoms and demonstration of variable obstructive airflow on lung function testing.[2,5] Yet, more recent definitions of asthma include airway inflammation and airway hyper-responsiveness to incorporate the subtypes of asthma identified through recent research on genetics and pathophysiological mechanisms.[2] This changing understanding of asthma has delivered new ways in which to test and treat for asthma subtypes and may in the future lead to asthma being 'deconstructed' into distinct 'treatable traits'.[5,6] Until then, a clear pragmatic way forward is needed to guide clinicians in non-specialist settings, where most asthma cases are diagnosed.[6]

Rationale for PCRS-UK consensus

In response to the uncertainty faced by many primary care clinicians in light of conflicting recommendations from national guidelines, this article developed by PCRS-UK members, aims to provide a clear, concise and pragmatic view on the diagnosis, management and monitoring of asthma in primary care. This article does not attempt to reproduce all the details contained in each guideline, but instead focuses on the areas that vary substantially between NICE and BTS/SIGN versions, offering a workable solution.

Recommendations

Asthma diagnosis

There is no definitive gold standard test which can categorically confirm or refute the diagnosis of asthma. Therefore, the diagnosis of asthma is made clinically following a structured clinical assessment; a careful integration of evidence from a wide variety of sources.[2,4] Key components of a structured clinical assessment include a detailed history, examination, review of the patient's clinical records and previously completed investigation results (e.g. peak expiratory flow, spirometry, blood eosinophils from a full blood count).

When taking a history, ask about wheeze, shortness of breath, cough and chest tightness, the most suggestive symptoms of asthma.[2,4] Symptoms usually occur in episodes with no (or minimal) symptoms between episodes.[2] Combinations of symptoms (particularly wheeze, cough and shortness of breath) occurring in episodes are more useful for identifying asthma than individual symptoms, particularly in children.[7] Ask about variability in symptoms through the day and between seasons. Clarify any triggers that provoke or worsen symptoms,[4] and in adults, check specifically for work-related factors. Remember to enquire about personal or family history of other atopic conditions such as allergic rhinitis or eczema.[4] Information from the patient clinical record, including previous respiratory illnesses, treatments and responses and previous examination findings (particularly wheeze heard on chest auscultation by a health professional) can further build the clinical picture.

On auscultation of the chest, asthmatic wheeze tends to be end-expiratory, scattered and polyphonic. Consider alternative diagnoses if wheeze is never heard during symptomatic episodes (Box 1). Remember that respiratory examination may well be normal in an asymptomatic individual, so it is important not to exclude asthma solely on examination findings.[4] In addition to a respiratory examination, check the throat for enlarged tonsils, and look out for other signs of atopic disease such as eczema or rhinitis.

Following a structured clinical assessment, the BTS/SIGN guideline recommends weighing up the probability that the individual has asthma based on three categories: high, medium and low.[2]

If a patient (whether adult or child) has all of the following typical clinical features, they are considered to have a high probability of asthma:[2]

- Recurrent episodes of symptoms ('attacks')
- Wheeze confirmed by a healthcare professional
- A personal or family history of atopy
- A past record of variable airflow obstruction
- No features to suggest an alternative diagnosis (Box 1).

If there is any doubt, the diagnosis should be considered as intermediate probability. Adults and children who have none of the typical features of asthma or whose symptoms are suggestive of an alternative diagnosis have a low probability of asthma.[2] The probability of asthma informs the next steps in the diagnostic work up as demonstrated in (Figure 1).

Even with a careful structured clinical assessment and diagnostic work up, the diagnosis of asthma can be challenging, particularly due to the variable nature of symptoms and lung function over time and the heterogeneity of presentation. Primary care is ideally placed to collect, record and appraise the information required to make an asthma diagnosis and provide continuity to allow repeated assessments over time so that treatment response and natural variation can be evaluated. Consequently, a diagnostic strategy based on repeated clinical assessments, supported by objective clinical tests (including peak expiratory flow monitoring) and sensitively using trials of initiating and discontinuing therapy is recommended as a practical way forward.

It is important to refer to specialist services in cases of doubt or difficulty (Box 2).

Whilst investigating asthma, and until a diagnosis is confirmed, use the code 'suspected asthma'.[2,4] Once a diagnosis of asthma has been made, record the basis for the decision in a single entry in the person's medical records, alongside the coded diagnostic entry. The diagnosis of asthma should ideally be revisited and checked regularly – especially when you first take over the care of a patient thought to have asthma. Good documentation is strongly recommended as the variable nature of asthma can lead to individuals experiencing long periods without symptoms, leading patients and clinicians to question the original diagnosis.[8]

Objective tests

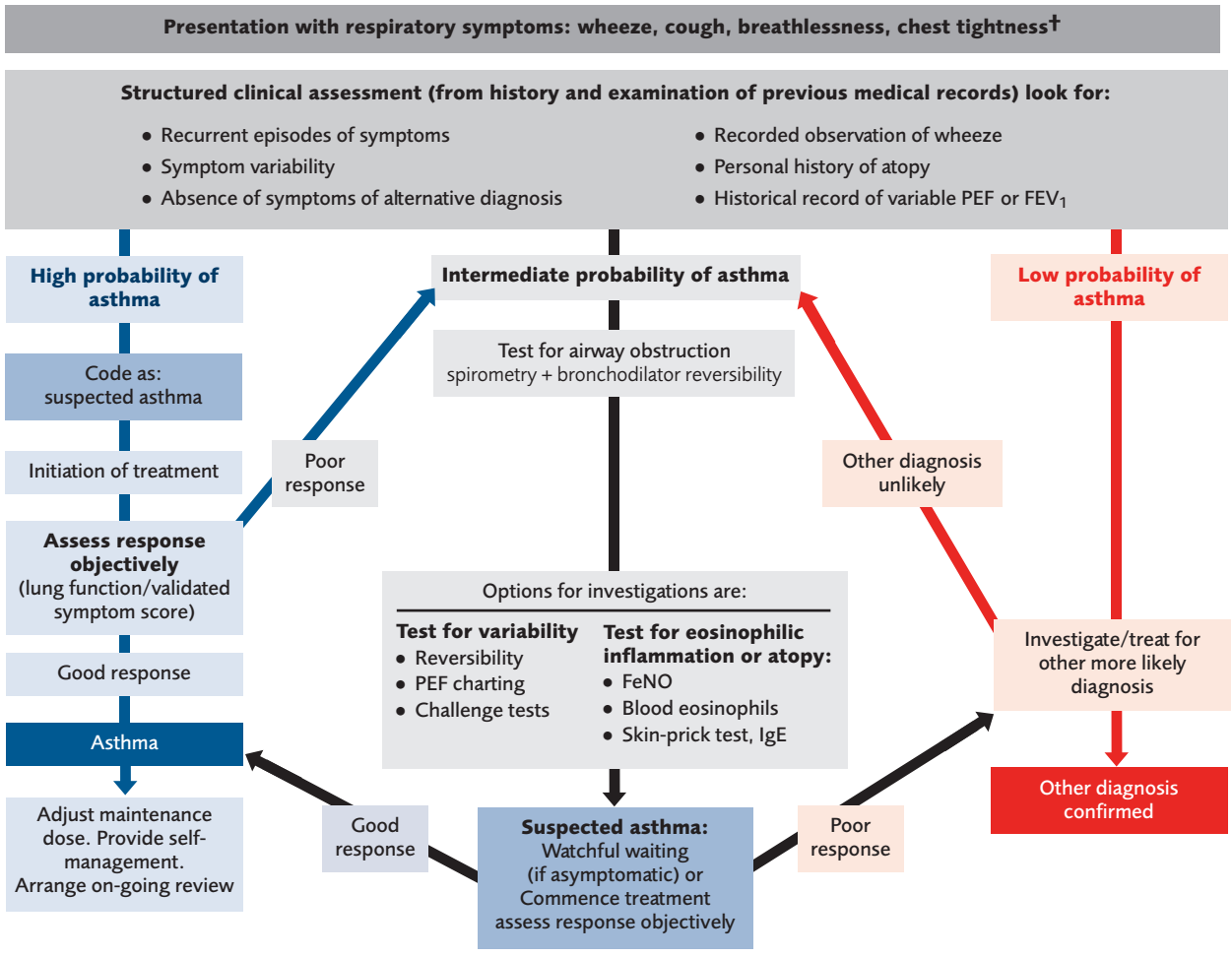
Objective tests should be done in all patients old enough to perform

Box 1. Clinical features to suggest an alternative diagnosis to asthma in adults (from BTS/SIGN 2016)[2]

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
Mostly 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 (i.e. over 30 pack-years), age of onset over 35 years	COPD
Chronic productive cough with no wheeze or breathlessness	Bronchiectasis*, inhaled foreign body*, obliterative bronchiolitis, large airway stenosis
New onset in smoker, systemic symptoms, weight loss, haemopthysis	Lung cancer*, sarcoidosis*

* may also be associated with non-obstructive spirometry

Figure 1. Diagnostic algorithm for individuals presenting with symptoms suggestive of asthma (from BTS/SIGN; 2016) [2]



† 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

them, as part of an initial diagnostic assessment to support a confident diagnosis of asthma. Increasing the quality and availability of objective testing across healthcare is an important policy priority. Understanding that each diagnostic test available for asthma has strengths and limitations is therefore valuable in order to use tests most effectively to build up sufficient evidence so that a differential diagnosis can be confirmed or refuted correctly.

Tests for demonstrating variability in airflow obstruction

A defining feature of asthma is variable airflow obstruction caused by airway bronchoconstriction. Yet, demonstrating variable airflow obstruction can be a challenge as airway physiology may be normal when an individual with asthma is asymptomatic. This is reflected in estimates for the negative predictive value of spirometry in adults and children which varies between 18 and 54%, indicating that more than half of patients who have a negative result (non-obstructive spirometry) will have asthma.[9]

Therefore, relying on objective tests of airflow obstruction completed only at a single point of time risks missing asthma, particularly if the patient is asymptomatic at the time of testing. Instead, testing for variable airflow obstruction should be repeated over time.

In primary care, peak expiratory flow monitoring and spirometry with bronchodilator reversibility testing are recommended measures to demonstrate variable airflow obstruction. When interpreting spirometry, BTS/SIGN recommend the use of lower limit of normal for FEV_1/FVC ratio (instead of the fixed ratio of 70%) in order to avoid the substantial under diagnosis in children and over diagnosis of obstruction in older people.[2,10] Although sometimes undervalued, peak expiratory flow monitoring can provide useful measurements. The value of PEF monitoring as an important initial test in the assessment of asthma was discussed in the Spring 2017 edition of *Primary Care Respiratory Update* see https://pcrs-uk.org/peak-flow-and-microspirometry-support-diagnosis.

Box 2. Reasons for specialist referral (from BTS/SIGN)[2]

Adults	Children
Referral for tests not available in primary care	
Diagnosis unclear	Diagnosis unclear
Suspected occupational asthma (symptoms that improve when patient is not at work, adult-onset asthma and workers in high-risk occupations)	
Poor response to asthma treatment	Poor response to monitored initiation of asthma treatment
Severe/life-threatening asthma attack	Severe/life-threatening asthma attack
'Red-flags' and indicators of other diagnoses	
Prominent systemic failure (myalgia, fever, weight loss)	Failure to thrive
Unexpected clinical findings (e.g. crackles, clubbing, cyanosis, cardiac disease, monophonic wheeze or stridor)	Unexpected clinical findings (e.g. focal signs, abnormal voice or cry, dysphagia, inspiratory stridor)
Persistent non-variable breathlessness	Symptoms present from birth or perinatal lung problem
Chronic sputum production	Excessive vomiting or posseting
Unexplained restrictive spirometry	Severe upper respiratory tract infection
Chest X-ray shadowing	Persistent wet or productive cough
Marked blood eosinophilia	Family history or unusual chest disease
	Nasal polyps
Patient or parental anxiety or need for reassurance	

Tests for demonstrating eosinophilic inflammation

A positive Fractional Exhaled Nitric Oxide (FeNO) test indicates the presence of eosinophilic inflammation, providing supporting (rather than conclusive) evidence for an asthma diagnosis. PCRS-UK produced a guide to FeNO testing in its Spring 2016 issue of *Primary Care Respiratory Update* – see https://pcrs-uk.org/feno-testing. A recent systematic review of the accuracy of FeNO in diagnosing asthma in adults and children reported a pooled sensitivity of 65% and specificity of 82%, indicating that FeNO has a higher potential for ruling in as opposed to ruling out the diagnosis of asthma.[11] In adults, a FeNO reading of 40ppb or more should be regarded as a positive test.[2,4] Accurate interpretation of a FeNO result requires an understanding of the potential confounding factors that may produce false positive and false negative results (Box 3), and must be made in the clinical context of the individual patient.

NICE (2017) recommendations for the role of FeNO in the diagnosis of asthma are very different to those advocated by BTS/SIGN.[2,4] Given the limitations of FeNO, a central role in the diagnostic work up of all people suspected of asthma, as advocated by NICE, seems over emphasised and may lead to unintended consequences. Currently, FeNO is not widely available in UK primary care, therefore, if FeNO is perceived as a required test, referrals to secondary care may increase, adding to the workload in specialist settings, and potentially de-skilling clinicians in primary care. Cost may be a barrier for individual practices adopting FeNO, as ongoing consumables are required in addition to an initial investment. A future solution might be for practices to pool resources and develop a locality based diagnostic service, as successfully implemented in the Netherlands, and currently being trialled in the UK.[4,14]

Despite these concerns, there are clear benefits to be gained from using FeNO, which could be realised if appropriately implemented. For instance, if an individual has an intermediate probability of asthma following a structured clinical assessment, a positive FeNO test increases the probability of asthma, providing further supporting evidence to confirm or refute a diagnosis. The BTS/SIGN recommendations for using FeNO in diagnosing asthma are therefore endorsed, until an optimal diagnostic pathway for UK practice is demonstrated.

Diagnosis in children

Confirmation of variable airflow obstruction by objective demonstration of peak flow monitoring or spirometry with reversibility is desirable in children old enough to perform these tests. However, the use of spirometry is not well established in children in primary care and additional training may be needed to ensure accurate results. If using FeNO in children aged 5-16 years of age, a result of 35ppb or more is regarded as a positive test.[2,4]

Box 3. Factors that may confound the accuracy of FeNO in making an asthma diagnosis[2,12,13]

Increased levels in men, tall people, and those with a diet high in nitrates (e.g. spinach, broccoli).
Increased levels in individuals with allergic rhinitis exposed to an allergen (even without respiratory symptoms)
Increased levels in those with rhinovirus infection (inconsistent effect in those with asthma)
Lower levels observed in children (N.B. accordingly a lower reference range is used)
Reduced levels in cigarette smokers
Reduced levels by inhaled or oral steroids

In children under 5 years of age, a diagnosis of asthma is based on establishing the probability of asthma after an initial structured clinical assessment.[2] If the probability of asthma is high, a trial of an inhaled corticosteroid (ICS) using a dosage of 400micrograms/day beclomethasone or equivalent may be considered.[15] If a child is started on a trial of treatment, it should last for 6 – 8 weeks, and stopped at the end of the trial.[2,15] If the child has had no response to treatment, and the medication has been taken, the diagnosis of asthma is unlikely.[15] If symptoms improve with ICS but recur when stopped, then settle again with reintroduction of treatment, a diagnosis of asthma can be made.[15] Where diagnostic doubt persists referral for specialist assessment should be considered (Box 2).

Asthma management

Management of asthma should be patient centred; encouraging and supporting self-management, and making treatment decisions in partnership with the individual. This should include promoting non-pharmacological approaches including weight control, encouraging physical activity and addressing tobacco dependency. Supported self-management, which includes the provision of an asthma action plan, improves individual asthma control whilst reducing visits to unscheduled care.

ICS are regarded as the foundation of asthma pharmacological treatment.[2,10] Therefore, a regular (low dose) ICS with a short-acting beta-agonists (SABA) as required is the recommended first line maintenance treatment for adults and children with asthma. Overuse of SABAs is well established as a risk factor for fatal asthma.[16] Close monitoring of short-acting beta-agonist use is advocated to ensure no more than 12 inhalers a year are used. If asthma is really well controlled a SABA inhaler containing 200 doses should last for three months.

Prescribing inhalers by brand name and device ensures that patients receive the inhaler that the prescriber intends for them. Prescribing a generic inhaler, or not specifying the device should be avoided as it may result in a patient receiving an inhaler they have not been taught to use. In addition, spacers should be prescribed with metered dose inhalers to increase the efficacy of drug delivery.

Add-on therapies

NICE and BTS/SIGN have different advice for the choice of first-line add-on treatment to low-dose ICS. Long-acting beta-agonists (LABA) are the more familiar add-on therapy in line with BTS/SIGN recommendations, and are more effective than leukotriene receptor antagonists (LTRA) in reducing the number of exacerbations.[4,17] LABA's are prescribed in combination inhalers with ICS which does improve the likelihood of adherence to an additional medication, and reduces the risk of harm from using LABA as monotherapy.[18]

NICE recommend LTRA as the first-line add-on therapy because the marginal superiority in efficacy of LABA (noted in adults)[17] is outweighed by its greater cost.[4] As an oral medication, LTRA's may offer an advantage for some for whom an inhaler is impractical. LTRA also offer treatment benefit for those with allergic rhinitis. Therefore, in line with a value based health care approach,[19] PCRS-UK recommend LTRA as the first line add-on therapy to ICS. Effectiveness and tolerability should be reviewed in 4-6 weeks. If LTRA is found ineffective, it should be withdrawn, as adding a LABA on top of a LTRA removes any cost advantage.

Ultimately the decision to opt for LTRA or LABA as initial add-on therapy should be made after a discussion between clinician and patient and should take consideration of other factors including patient preference, adherence (including the potential for additional prescription costs), concomitant diseases (e.g. rhinitis) and risk of exacerbation. Furthermore, there is no need to change the medication of patients who are already well controlled on LABA/ICS.

In children, the use of a paediatric low dose ICS with LTRA as first line add-on treatment is recommended. If this combination is ineffective then switch the LTRA for a LABA.

Asthma monitoring

Primary care is best placed to monitor asthma by staff who are trained, competent and confident, and should be completed regularly (at least annually in stable patients with a definite diagnosis) as a pre-planned appointment but also opportunistically. A more frequent review may be necessary when a diagnosis is first made, or for those with poor asthma control. At each review, asthma control, lung function, asthma attacks, oral corticosteroids and absence from work or school should be recorded in the notes. Asthma control should be assessed using the validated asthma control questionnaire or asthma control test, and are recommended over the Royal College of Physicians three questions which has greater value as a screening test for poor control. Peak flow or spirometry (or both) should be used to assess lung function. If asthma control is sub-optimal check for and address the common causes of asthma control listed in Box 4.

Currently there is insufficient evidence from real-life primary care to support using FeNO routinely to monitor asthma control. However, it may be an option to support asthma management in people who are symptomatic despite using ICS as it can help to identify poor adherence.

Box 4. Common causes of poor asthma control

Incorrect diagnosis. Or co-morbidity that has been missed
Lack of medication adherence
Current treatment is unsuitable
Under-use of ICS. Or overuse of SABAs
Inappropriate inhaler technique
Failure to use a spacer with ICS delivered by a metered dose inhaler
Smoking (active or passive) – ideally use a carbon monoxide meter to monitor smoking
Exposure to occupational triggers
Seasonal or environmental factors
Psychosocial reasons, including ideas and concerns about asthma / treatment

As well as during a routine review, inhaler technique should be observed and errors in technique corrected at every opportunity when there is a deterioration in asthma control; when the inhaler is changed; and if the patient requests a check.

Conclusions

The presence of multiple guidelines for asthma care is unhelpful, creating uncertainty for clinicians and potentially leading to inconsistencies in the care of individual patients.

From the outset of NICE's proposal to develop guidelines for asthma PCRS UK has argued for retaining a single comprehensive and regularly updated asthma guideline for the four nations of the UK.[20] We have restated this call repeatedly to NICE, BTS/SIGN and NHS England.

A return to a single asthma guideline developed through the collaboration of NICE and BTS/SIGN, would allow the strengths of both organisations to be drawn upon to produce clear and consistent recommendations.

In the meantime, we have proposed clear guidance to address particular concerns over conflicting aspects of asthma diagnosis, management and monitoring that will support non-specialists to continue providing high quality asthma care.

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The Appropriate Use of Rescue Packs

Fran Robinson, discusses the use of rescue packs with Dr John Hurst, Honorary Consultant at the Royal Free London NHS Foundation Trust and Reader in Respiratory Medicine at University College (UCL) London

NICE recommends prescribing rescue packs for patients with COPD at risk of having an exacerbation, which has resulted in them becoming widely used.[1,2] But are they always prescribed and used appropriately?

"It is easy to prescribe a patient antibiotics and steroids and say 'go away and take them when you feel an exacerbation is coming on'", says Dr John Hurst, Honorary Consultant at the Royal Free London NHS Foundation Trust and Reader in Respiratory Medicine at University College (UCL) London.

But this is not an effective strategy because it may result in misuse of the medication unless you back the prescription up with education about how and when (and when not) to use the medication. "A rescue pack is more than just a prescription, it needs to be tied in to other aspects of a patient's care," he says.

Dr Hurst, who has clinical and research interests in exacerbations of COPD, says there is insufficient evidence to show that rescue packs in themselves are safe and cost effective at reducing hospital admissions. However, there is Cochrane evidence to show that self-management is associated with outcomes such as a reduction in hospitalisation.[3] But there is a big difference between effective self-management and the simple prescription of a rescue pack.

"The problem is that, when looking at the effectiveness of rescue packs from a research perspective, it is more complicated than just investigating the outcome of prescribing steroids and antibiotics to be taken at home. This is because a rescue pack should be linked with an educational intervention and the impact of that complex intervention, and assessing fidelity to the intervention, is more difficult to assess."

According to Dr Hurst, rescue packs are both over- and under-used. "We certainly see some GPs who feel uncomfortable prescribing them, and that is OK if you can facilitate a patient's urgent access to the practice when they are developing an exacerbation. Indeed, in some ways that might be a better standard of care than giving them a rescue pack to take at home – but this is very difficult to implement for many practices."

"Other clinicians are comfortable with giving patients rescue packs on repeat prescription and ensuring that the patient is well educated about when and how to use them. However, if patients do not understand the risks of overusing the medication, they may run the risk of long-term complications. Overuse of steroids is linked with adrenal suppression, osteoporotic fractures, diabetes, pneumonia, psychosis, thinning skin and cataracts, and overuse of antibiotics (or not taking them for the full course) risks antimicrobial resistance both in the individual patient and in our society."

Identifying patients who are suitable for rescue packs

So how do you select the patients who will benefit from a rescue pack? "It is about recognising which patients are willing and able to self-diagnose and start treatment at the start of an exacerbation. You are asking a patient to differentiate an exacerbation from the day-to-day ebb and flow of symptoms, and that can be challenging for healthcare professionals, let alone those living with COPD. So this is not just about self-management; it is also about self-diagnosis and patients are not trained diagnosticians. They know more about their own symptoms than anybody else, of course, but some people can misinterpret their day-to-day symptom variations as an exacerbation."

Dr Hurst says it is patients who are susceptible to frequent exacerbations (at least two a year) who are most likely to benefit from rescue packs. These patients will know what an exacerbation feels like. "There isn't any point giving a rescue pack to a patient who hasn't had an exacerbation because they will not have experienced those symptoms before, and they will be at less risk of future events," he says.

Before considering prescribing a rescue pack, Dr Hurst says the clinician must first make sure that all the high value interventions for COPD have been employed to reduce the risk and consequences of exacerbations. These include smoking cessation, influenza vaccination, pneumococcal vaccination, pulmonary rehabilitation and optimisation of pharmacotherapy to ensure the patient is using the right combination of inhalers.

Then the clinician must assess whether the patient is willing and able to take the rescue medication as directed and has been well educated on how and when to use it.

Education

Patients need to be taught:

- How to recognise the start of an exacerbation (eg, whether there has been a change in the volume, purulence or colour of the phlegm they produce normally and whether they are experiencing breathlessness or wheeze).
- About the risks and benefits of the treatment
- Alarm symptoms – things to be alert for that are not typically part of an exacerbation or things that might mean something different is going on.
- They must contact their healthcare professional if they have started their treatment to alert them that they have become unwell
- As a safety net, patients should be told that, if their symptoms feel different from their usual exacerbation, then taking the rescue may not be the right thing to do and they must also call for help from their community respiratory team or GP

Is it time to stop prescribing rescue packs in COPD?

This is a question Dr Hurst will be answering in a presentation to the PCRS-UK conference in September. "No is the answer, but we can and must do it better," he says. "We need to do more research into the subject otherwise, if we don't address this question, we will be having the same discussion in 10 and 20 and 30 years' time. The studies are not going to be easy and they will be expensive, but they are needed if we want to improve what we are currently doing," he argues.

One study already in the pipeline is a National Institute for Health Research (NIHR) Heath Technology Assessment (HTA) Programme proposal for research into the use of sputum colour charts which could help patients more accurately detect a change in their sputum symptoms before starting a course of antibiotics.

There is also promising evidence that the prescription of steroids may be better guided by looking at blood eosinophils. Point-of-care meters may in future be used in primary care to assess the blood eosinophil counts of patients. This will help primary care clinicians to more accurately assess whether a patient will benefit from prednisolone at the time of exacerbation.

For now, Dr Hurst says the best option for patients with COPD is to ensure they have a really good self-management plan, and are empowered to manage their disease through attendance at a pulmonary rehabilitation programme. Those who would benefit from having rescue packs at home should be prescribed them with the necessary educational support and safety netting.

Learning points

- Patients who are most likely to benefit from a rescue pack are those at risk of frequent exacerbations (at least two a year) and who can recognise when an exacerbation is starting
- Before prescribing a rescue pack:
  - First make sure all the key high-value interventions for COPD have been employed to reduce the risk and consequences of exacerbations and that the patient has a self-management plan
  - Assess whether the patient is willing and able to take the medication as prescribed
  - Make sure the patient has been educated about the risks and benefits of treatment and of overusing the medication
  - Ensure the patient has a safety net: advise them that, if their symptoms feel different from their usual exacerbation, then taking the rescue may not be the right thing to do and they must also call for help from their community respiratory team or GP

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NICE recommendations[1]

Patients at risk of having an exacerbation of COPD should be given self-management advice that encourages them to respond promptly to the symptoms of an exacerbation by:

- Starting oral corticosteroid therapy if their increased breathlessness interferes with activities of daily living (unless contraindicated)
- Starting antibiotic therapy if their sputum is purulent
- Adjusting their bronchodilator therapy to control their symptoms
- Patients at risk of having an exacerbation of COPD should be given a course of antibiotic and corticosteroid tablets to keep at home for use as part of a self-management strategy
- It is recommended that a course of corticosteroid treatment should not last longer than 14 days as there is no advantage in prolonged therapy
- The appropriate use of these tablets should be monitored
- Patients given self-management plans should be advised to contact a healthcare professional if their symptoms do not improve
- Patients should contact a primary healthcare professional if they start treatment with a home supply of medication. This is to ensure that medications are taken appropriately; that the exacerbation is recorded; an attempt is made to identify any trigger for the exacerbation; and the home supply of rescue medication is replaced.[2]

What should be in a COPD rescue pack?

NICE[2] recommends that a COPD rescue pack is part of a self-management plan to enable patients to manage a deterioration in their symptoms (onset of exacerbation) promptly and reduce their risk of hospital admission.

A COPD rescue pack should include:

- Prednisolone 30 mg orally to be taken for 7–14 days. It is recommended that a course of corticosteroid treatment should not be longer than 14 days as there is no advantage in prolonged therapy
- Oral antibiotics for people with purulent sputum or clinical signs of pneumonia depending on local antibiotic prescribing guidelines:
    - Prescribe amoxicillin 500 mg three times daily for 5 days, or if there is a true allergy to amoxicillin, doxycycline 200 mg on the first day then 100 mg once daily for a total of 5 days
    - If amoxicillin and doxycycline are contraindicated, prescribe clarithromycin 500 mg twice daily for 5 days
    - If the person has an increased risk of antibiotic resistance (comorbid disease, severe chronic obstructive pulmonary disease (COPD), frequent exacerbations or antibiotic use in the past 3 months), prescribe co-amoxiclav 500/125 mg three times daily for 5 days

*An update on the NICE COPD guideline is expected to be published in November 2018.

Patient's perspective of rescue packs

We asked our Lay Reference Group (Neil Jackson, John Hubbold, Barbara Preston and Mary Lettington) what they felt about rescue packs

Most members of the group have rescue packs at home and say they feel confident that they know when they need to take them and at what point they need to contact a healthcare professional.

Neil Jackson, who has alpha-1 antitrypsin deficiency, has a standby pack of clarithromycin antibiotic tablets he keeps in the fridge. When prompted by the interview for this article he found they were nearly a year out of date.

Neil Jackson

He says the colour of his mucus is the trigger to take the antibiotics and his consultant, Professor Robert Stockley, Consultant Respiratory Physician at University Hospitals Birmingham, has conducted studies correlating mucus colours with various degrees of infection and produced some helpful colour charts for patients.

John Hubbold

John Hubbold, who has relapsing polychondritis, says he understands his symptoms well and monitors his health daily and is confident about taking the steroid and the antibiotic in his rescue pack at the right time when he is feeling ill. "Both my consultant and various GPs are happy that I do this", he says.

Barbara Preston

But Barbara Preston, who has bronchiectasis, says: "To people like myself, the key treatment is intervention as early as possible to squash any infections as these only lead to more inflammation and scarring, making the condition worse each time. However, it's not always clear cut when to take antibiotics and there's a danger of 'playing chicken' and waiting till something has got a hold."

Mary Lettington, who has COPD and emphysema, says she feels that, when prescribing rescue packs, healthcare professionals need to be familiar not just with the patient's condition, but also their social situation and treatment history. "Rescue packs are desirable but need to be set within a prescribed framework. That framework should require every person to have a needs-led assessment which would then generate a customised rescue pack with relevant conditions attached, specific to that patient and their capacity to use the pack wisely."

Barbara Preston comments: "Some patients will err on the side of taking their medication too often, others not soon enough. Patients need as much education as possible and healthcare professionals need to know their individual patients."

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- ✓ Thought-provoking, entertaining keynote plenaries - including case-based **Grand Round** session and a **Room 101 Respiratory Special** designed to banish some of the audience's 'pet hates' and the least valuable activities in respiratory
- ✓ **Interactive, practical workshops** run in conjunction with Education for Health, offering an opportunity to enhance key consultation and clinical respiratory skills

Conference partners

asthma UK

British Lung Foundation

education for health

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For more information visit https://pcrs-uk.org/annual-conference

PCRS-UK National Respiratory Conference

BUILDING CONFIDENCE IN A CHANGING WORLD

28-29th September 2018 Telford International Centre

The 2018 PCRS-UK annual conference, 'Building Confidence in a Changing World', will inspire delegates to think differently and find new ways of working with patients, colleagues and commissioners in a busy working environment.

Supported by our conference partners Asthma UK, the British Lung Foundation (BLF) and Education for Health, this event is designed to provide positive solutions and practical insights to help delegates respond to the demands they face in primary and community care. Sessions will offer a vision of a brighter future for respiratory patients and ways to achieve greater job satisfaction for respiratory professionals.

Anne Rodman, independent advanced respiratory nurse specialist and co-Chair of the Conference Organising Committee, says: "We recognise that there is currently a lot of pressure on healthcare professionals so we have designed a programme that will help people to work more effectively. This event will highlight how simple, small changes can be easily embedded into day-to-day practice to improve respiratory care. Speakers will give people the evidence for those changes and the confidence to make them happen."

> *"Attending this conference has been well worthwhile. A session on chronic breathlessness has shown me that there's a lot more that we as GPs can be doing to work patients up before we refer these patients into secondary care and there are ways we can work more collaboratively with our secondary care colleagues. We are going to employ another nurse and I've gained a lot of ideas from the things I've heard here about how we can best use her"*
>
> Eamon Shanahan, GP, Killarney

The programme, compiled by a multidisciplinary team of respiratory experts, has been designed to appeal to all professionals working with respiratory patients including GP practice teams, respiratory community teams, integrated care clinicians, clinical commissioners and academic researchers from across the UK.

There will be plenary presentations, clinical updates, service development sessions, best practice and scientific research abstracts and practical workshops. Delegates will also be able to attend a series of sponsored symposia developed in conjunction with our pharmaceutical company sponsors.

Confidence to treat the patient in front of you

The conference will launch with a thought provoking plenary session called 'Confidence to treat the patient in front of you'. Keynote speaker, David Price, PCRS-UK Professor of Primary Care Respiratory Medicine at the University of Aberdeen, who has been extensively involved in respiratory research, will talk about effective ways of assessing the respiratory patient within the 10-minute consultation. He will explain how to address the different features of respiratory disease, drawing on research he has done on identifying patient 'clusters'. This work has shown how there are certain traits that are shared by groups of patients with asthma that need addressing in a different way. He will also explain how labelling a patient with a disease can be a hindrance, particularly when patients often have more than one thing wrong with them.

> *"I've come to this conference because my colleagues have been previously and are evangelical about PCRS-UK. It has lived up to expectations and I have learned a lot that I can take back to my practice and share at our nurse education meetings. Everything I have heard has motivated me to think what more can I do to improve the care I give to my patients"*
>
> Penny, Respiratory Practice Nurse, Telford

Clinical symposia

Dr Katherine Hickman, GP and co-Chair of the Conference Organising Committee, says this year's clinical sessions will focus on getting the basics right and building on that foundation to improve care. "Everybody who comes to the PCRS-UK conference is there because of their passion and drive to provide the best respiratory care for their patients. We hope that every delegate will be inspired to go back to their practice and introduce at least one practical thing which will improve their practice and influence colleagues. Every speaker has been briefed to deliver a call to action, something simple, that delegates can take away and implement straight away in their everyday practice."

> *"An interesting variety of different conditions are discussed at this conference. I like the way there is a focus on the patient and not just the disease"*
>
> Teresa, Respiratory Physiotherapist, Bath

Clinical sessions

- *Challenging the diagnosis: could it be lung cancer yet?* An update on recognising when things have changed for a patient with symptoms of cough and shortness of breath and when lung cancer should be suspected.
- *Asthma Speed Bumps: what's getting in the way and slowing our progress?* A refresher on the lessons learned from the National Review of Asthma Deaths (NRAD) and what we can do to prevent asthma deaths and emergencies, plus a presentation on how we can effect change for the better both in ourselves and our patients.
- *Is it time to stop prescribing rescue packs in COPD?* This session will look at the evidence for rescue packs and how we can we prescribe them more effectively.
- *Shared decision-making: what does it mean to clinicians and patients alike?* Learn how to involve patients more effectively in shared decision-making by giving them informed choices and strategies to improve their self-management skills.
- *Journal overload?* A whistle-stop tour of the latest and most useful research papers on respiratory medicine.
- *Supporting patients living with nicotine dependency: are e-cigarettes helpful?* An update on the latest evidence about e-cigarettes.

Workshops

This stream provides a series of interactive, practical workshops run in conjunction with Education for Health.

Val Gerrard, Advanced Nurse Practitioner and member of the Conference Organising Committee, says: "Our hands-on workshops, run by experienced trainers, are always popular with delegates because they are an opportunity to both revisit the basics of care and learn some new consultation and clinical skills that will help everyone to improve respiratory care in their daily practice."

Workshop sessions

- *Inhaler technique – the ever changing choice*: A hands-on refresher on the correct use of the inhaler to ensure optimum drug delivery.
- *Spirometry interpretation*: An update in spirometry interpretation skills.
- *Tackling tobacco dependency during a consultation*: Learn how to effectively support your patients to quit smoking.
- *CBT in a 10-minute consultation*. The principles of cognitive behaviour therapy and how it can be introduced in a 10-minute consultation.

> *"This conference is really, really interesting and is an excellent way of keeping up with the latest developments and research and also of reinforcing a lot of what I already know"*
>
> Maureen, Community Respiratory Nurse Specialist, Strood

> *"This conference is very well targeted at primary care and is very stimulating. In a session on bronchiectasis I learned a lot of new things and was able to think of three or four patients of mine that the speaker was describing. I've also been interested by the FeNO debate, because we have been one of the test sites and we have been wondering how on earth we are going to be able to put this new technology into practice. I have a lot of ideas to cascade back to the practice team"*
>
> Simon, GP, Kettering

- *Home oxygen therapy – your role*: An insight into the impact of oxygen therapy on patients and how it affects their daily lives.
- *Chest examination*: The skills you need to perform a chest examination.
- *Horrible histories – how to take a patient history*: A session on taking a structured history.
- *Is FeNO feasible?* A hands-on opportunity to learn about the role of fractional exhaled nitric oxide (FeNO) testing in primary care.
- *Asthma action plans in action*: Understand how to develop an effective asthma action plan.

Service development stream

A series of service development sessions will focus on delivering sustainable change and improvement in respiratory care. Dr Sanjeev Rana, a member of the Conference Organising Committee, says: "These sessions will showcase the innovative and exciting methodology being used to create system-wide change and how commissioners and clinicians can scale up current delivery models for respiratory patients. This session is for clinicians who are interested in delivering high quality population-based care across a health economy which will enable staff to work at the top of their licence."

Service development sessions

- *New providers, novel methods: can other organisations provide added value in pulmonary rehabilitation?* This session will describe the models of pulmonary rehabilitation that can be offered by different providers.
- *Diagnostic spirometry service provision*: A commissioner and a trainer will discuss how to deliver a high quality spirometry service.
- *Driving change within healthcare systems using Quality improvement (QI) methodology*: Learn how you can use QI to create change within your health economy.
- *The importance of getting the diagnosis right*: Two clinicians will talk about their experiences of setting up an asthma diagnosis pathway and a breathlessness service within a COPD pathway
- *Risk stratification in COPD*: This session will look at the pros and cons of risk stratification and how the GOLD tool has been used in Essex to increase efficiency and improve patient outcomes.
- *Mental health and parity of esteem*: How introducing smoke-free policies and holistic health assessments in mental health settings can improve respiratory care

> *"This is the 10th PCRS-UK conference we have been to and we learn something new every time. We have noticed that there are a lot of new people here this year"*
>
> Angela and Julie,
> Advanced Nurse Practitioners

Best Practice abstracts

This year Best Practice abstracts will be showcased in the Service development stream as oral or poster presentations. These abstracts, which will describe projects in primary care such as a new service, a new way of working or the results of an audit, will give delegates an opportunity to share innovative ideas to take back home and implement in their own practices.

Dr Andy Whittamore, GP and Asthma UK clinical lead, says: "These abstracts will highlight any small or big changes that people have made in their practice, CCG or locality where they work which have improved the quality of care for patients or the workload of clinicians, for example. It might be an initiative that people have implemented that has made the basics go better or it could be something completely innovative that has changed the way things actually happen in their practices. It is a chance for clinicians to both show off what they have achieved and to share their learning with delegates."

Plenaries

A respiratory-themed 'Room 101', based on the popular TV programme, will provide an entertaining plenary to lighten the mood at the end of the first day of the conference. Panellists will bring along a selection of pet hates to go into 'Room 101', providing an irreverent but educational session.

> *"This is such a friendly conference and it's great for networking. I work across primary and secondary care and it's great to be able to make those links here to understand how we can make things work better for patients. There is something relevant in every session. There's always something at this conference you can take back that you can change or do better"*
>
> Sarah, Respiratory Specialist Nurse, Isle of Wight

The popular Grand Round, which closes the conference, will take a look at the patient's journey through the different ages of lung health working back from old age to childhood. This will get delegates to think about the management and holistic care of respiratory conditions in the context of the changes that life brings.

npj Primary Care Respiratory Medicine research stream

The *npj Primary Care Respiratory Medicine* research stream will showcase the cutting edge of scientific research in respiratory primary care.

This year the research stream will be devoted entirely to presentation and discussion of high quality scientific research, making the PCRS-UK conference the only UK event in the academic calendar with a stream entirely dedicated to primary care respiratory research.

Abstract submission is now open for submission of high quality research abstracts across the spectrum, from systematic reviews and database studies through to clinical trials and implementation studies, anticipating a good mix of quantitative and qualitative work. Abstracts of work in progress and study protocols will also be welcomed, providing researchers with an opportunity to receive feedback which can impact the direction of a study.

Dr Helen Ashdown, PCRS-UK Research Lead, says: "This is an excellent forum to find out about things that are going on elsewhere, share ideas and develop new collaborations. With clinical sessions running alongside, this is a great conference for both clinical and non-clinical researchers to learn from practising clinicians, as well as stay up to date with clinical topics.

"While we always have work presented by world-leading researchers, we also offer a friendly and supportive environment for early career researchers to network and receive feedback from colleagues and more experienced researchers."

Prizes will be awarded for the best research abstract and for the best poster displayed at the conference. Prize winners will be offered free registration for the 2019 conference, with a travel bursary to enable them to attend for the overall winner. The best research abstract will also be presented to the whole conference in the closing plenary.

What Else Can It Be?

In this regular feature we will explore cases of rarer lung conditions and their presentation

Doug and his Breathlessness

Dr Steve Holmes, PCRS-UK Education Lead

Doug is now 70 years old having retired 5 years ago. He was a self-employed plumber for many years in the local area and was well liked by many in the practice – who had benefited from his skills. Doug lives with his wife who is fit and well at the present time. Doug has some osteoarthritis of his knees and was diagnosed with COPD a year before he retired. Like many people of his age, he had started smoking at the age of 14 years and stopped with a 31-year pack history when he was 45 years old.

Doug had a comprehensive history and examination performed at the time of diagnosis, his chest x-ray and full blood counts were normal and he had good quality spirometry which helped to confirm the diagnosis. Doug had been treated with a long-acting muscarinic antagonist and a long-acting beta agonist/inhaled corticosteroid combination and had attended for annual reviews. His last review suggested no significant change in symptoms or his FEV_1, and he had only had one exacerbation in the past requiring treatment with oral steroids and antibiotics.

Three months later he decided he ought to see the practice as he was feeling gradually more breathless when he was walking upstairs, walking outside with the dog or trying to garden – and was getting some minor chest pains. Examination showed normal regular heart rate and heart sounds; his blood pressure was fine; the FEV_1 had not particularly changed from 3 months previously when reviewed; listening to his chest there were no definite focal findings although the clinician wondered if there was some dullness at the right base and reduced air entry.

The clinician decided to arrange an urgent chest x-ray, ECG and review. The x-ray report suggested a small to moderate right-sided pleural effusion, and Doug was spoken to on the telephone and referred on receipt of the report to the suspected lung cancer clinic with a 2-week wait. He had some blood tests arranged and was booked in to see the clinician 1 week later.

The CT scan with contrast was suggestive of malignant pleural mesothelioma (MPM); after discussion with the multidisciplinary team (MDT) at the hospital a pleural biopsy was arranged.

Commentary

The link between asbestos and MPM was made in 1960, although the first reported case was in 1870.[1] Doug has a well-recognised risk factor (his job as a plumber in the building trade would have involved considerable exposure to asbestos as its use was not banned in the UK until 1999). Asbestos is a naturally occurring fibre used to insulate and fireproof buildings and was commonly used in ceiling and floor tiles, pipe insulation and boilers. There are well-recognised occupations which leave people more at risk (see Box 1). Indeed, for people who were born in the 1940s and worked as a carpenter for more than 10 years, the lifetime risk of mesothelioma is 5.9% and 2% for plumbers, electricians and painters. However, it is not uncommon to detect MPM in people who have no known exposure to asbestos or have partners involved in risky occupations (potentially linked to fibres in clothing).

Mesothelioma takes a long time to develop (often 30–40 years after exposure) and common symptoms are usually non-specific (especially breathlessness, cough and chest pain). The chest pain is usually more localised than cardiac. The latest guidance would also suggest that we should not diagnose without investigations,[2] and that the NICE guidelines for early diagnosis of malignant lung cancers[3] should be adhered to. Hence, we should have a low threshold for arranging a chest x-ray (see Box 2). The chest x-ray can sometimes be normal in this situation so, if clinical suspicion is high, our patients should be referred. (A unilateral effusion as in Doug's case should be taken as malignancy until proven otherwise – renal/liver/cardiac causes are usually bilateral). The clinician might have considered doing screening bloods

Box 1: Those involved in industries using asbestos who are at higher risk of developing mesothelioma

- Carpenters and joiners; painters, decorators
- Plumbers, pipe fitters, heating and ventilation engineers
- Electricians, electrical fitters
- Metal plate workers, shipwrights, riveters
- Labourers in other construction trades
- Sheet metal workers
- Construction and energy plant operatives
- Building inspectors
- Vehicle body builders and repairers
- Metalworking production and maintenance fitters
- Shipbuilding, railway and engineering workers
- People who have worked on DIY projects, particularly Artexing ceilings or working with guttering or insulation materials

Box 2: Symptoms that should refer for urgent chest x-ray (urgent within 2 weeks) if unexplained (one if smoker, two if non-smoker). Note: anyone over 40 years old with unexplained haemoptysis should be referred urgently without a chest x-ray for further investigation[3]

- Cough
- Fatigue
- Shortness of breath
- Chest pain
- Weight loss
- Appetite loss (new 2015)
- Persistent or recurrent chest infection
- Finger clubbing
- Supraclavicular lymphadenopathy or persistent cervical lymphadenopathy
- Chest signs consistent with lung cancer
- Thrombocytosis (new 2015)

to look for other causes of breathlessness (eg, full blood count for anaemia, thyroid function testing for thyroid disease or pro-BNP if cardiac failure is suspected). Similarly, it is widely recognised that a normal ECG does not exclude angina hence, if a suspicion is high, it may be appropriate to consider other tests.

Doug came to see the clinician around a week after being seen by the specialist. He indicated that he had been told that the diagnosis is very likely to be MPM and that he is waiting for a definitive treatment plan and says that he has looked up about MPM on the internet. He is interested to know about options in management.

Commentary

Many patients have access to the internet now (or a friend who can help them when they want more information). Reliable information can usually be found on NHS Choices, patient.co.uk and Mesothelioma UK (http://www.mesothelioma.uk.com/) or the British Lung Foundation (https://www.blf.org.uk/support-for-you/mesothelioma). There can be medico-legal implications of a diagnosis as some people will be entitled to compensation, and information is available on these patient websites relating to obtaining specialist legal advice. Most clinicians will see very few cases in their professional career (in 2015 there were 2,697 cases in the UK).[4] For clinicians, a recent BTS guideline has been produced.[2]

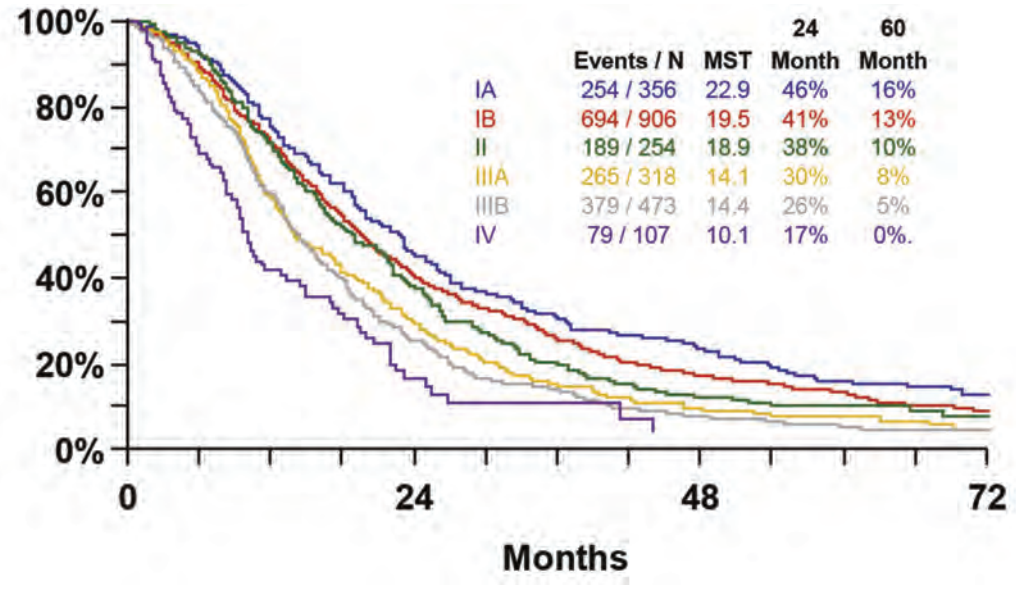
It is worth remembering that Doug may require further investigations (PET or MRI scan). Any biopsies will be reviewed by a pathologist with expertise and, as interpretation is difficult, a second pathologist may be involved. The treatment plan will usually be agreed by a specialist multidisciplinary team but unfortunately prognosis is not good, with even early disease having a 5-year survival of 16% (Figure 1).[5]

There are several treatments options available:

- Pleural effusions may be managed with talc or indwelling pleural catheters for symptomatic relief (usually not by video-assisted thoracoscopic surgery partial pleurectomy).
- Some people may be appropriately treated with cisplatin and pemetrexed (if good performance status like Doug). The guidance does recommend that, where licensed (not presently in the UK), bevacizumab should be added to this regime.
- Palliative radiotherapy is recommended for localised pain in MPM.
- Symptom control is important and should be managed in keeping with general palliative care – and early involvement is appropriate with specialists if problems with symptoms.

It is important to emphasise to Doug that there will be very specialist care provided in keeping with national guidelines, but that his practice will support him and his wife through this too. The challenge is helping Doug to achieve the best he can in a way that helps him to understand realistically the options available to him, and provide him with the best

Figure 1: Overall survival according to best stage (proposed eighth edition).



Reprinted from *Journal of Thoracic Oncology*, Vol 11, No 12, Rusch VW *et al*, THE IASLC Mesothelioma Staging Project: Proposals for the M Descriptos and for Revision of the TNM Stage Groupings in the Forthcoming (Eighth) Edition of the TNM Classification for Mesothelioma. 2112-2119 (2016), with permission from Elsevier

choices possible for his situation. MPM remains a challenge clinically and the prognosis remains poor, but optimising care remains a realistic goal. It is worthwhile planning for the future too with advance directives, ensuring wills are sorted out and considering a lasting power of attorney. Also, as MPM is classified as an industrial disease, it will need to be referred to the coroner who may request a post-mortem and will hold an inquest. The inquest will often delay formal release of a death certificate although may well not delay the funeral plans.

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Getting the Basics Right

Managing dilemmas in respiratory tract infections and antibiotics prescribing

Dr Kevin Gruffydd-Jones and **Dr Katherine Hickman**

Respiratory tract infections (RTIs) are the commonest acute problem dealt with in primary care. Most will be self-limiting, and in this case the risk of complications is likely to be small.

The dilemma for the clinician, however, is being able to spot whether an apparently minor RTI may be something more complicated. Careful decisions also have to be made about when to prescribe antibiotics. Antimicrobial resistance is one of the biggest threats to humanity. On 21 September 2016, 193 countries in the United Nations agreed a landmark declaration to rid the world of drug-resistant infections or 'superbugs'. The majority of antibiotics in the UK are prescribed in primary care and we all have a responsibility to prescribe responsibly.

What is a self-limiting infection?

Self-limiting RTIs will resolve on their own without treatment and will have no long-term effect on a person's health.

NICE says the duration of uncomplicated RTIs are:

- Acute otitis media: 4 days
- Acute sore throat/acute pharyngitis/acute tonsillitis: 1 week
- Common cold: 10 days
- Acute rhinosinusitis: 2.5 weeks
- Acute cough/acute bronchitis: 3 weeks

The clinical assessment should include a history (presenting symptoms, use of over-the-counter or self-medication, previous medical history, relevant risk factors, relevant comorbidities) and examination to identify relevant clinical signs (temperature, respiratory rate and capillary refill time in children under 5).

It is important to understand why the patient is presenting at this point in their illness and what their ideas, concerns and expectations are.

The NICE 2008 'Respiratory tract infections (self-limiting): prescribing antibiotics' guideline says that, while most patients can be reassured that they are not at risk of major complications, the difficulty for prescribers lies in identifying the small number of patients who will suffer severe and/or prolonged illness or, more rarely, go on to develop complications. The Guideline Development Group struggled to find much good evidence to inform this issue and says this is an area where further research is needed.

How to deal with patients expecting an antibiotic

Dr Gruffydd Jones, GP Principal and Joint Policy Lead PCRS-UK, says many patients will come in expecting antibiotics. The clinician should evaluate whether immediate antibiotics are needed (see Box). If not needed, the clinician should address their concerns and expectations, explain why an antibiotic will not cure their symptoms and educate them that their condition will be self-limiting.

When should antibiotics be prescribed?

No antibiotics or delayed antibiotic prescriptions should be given when patients have:

- Acute otitis media
- Acute sore throat/acute pharyngitis/acute tonsillitis
- Common cold
- Acute rhinosinusitis
- Acute cough/acute bronchitis

Unless patients are systemically unwell and/or have:

- Bilateral acute otitis media (in children younger than 2 years)
- Acute otitis media (in children with otorrhoea)
- Acute sore throat/acute pharyngitis/acute tonsillitis when three or more Centor criteria are present:
  - Fever (>38°C)
  - Tender cervical lymphadenopathy
  - Tonsillar exudate
  - Absence of cough
- Signs of community acquired pneumonia (CAP) (see below), in which case they should be considered for an immediate antibiotic prescribing strategy

Or:

- Patients have signs of developing complications
- If the patient is at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis and young children who were born prematurely
- If the patient is older than 65 years with acute cough and two or more of the following criteria, or older than 80 years with acute cough and one or more of the following criteria:
  - hospitalisation in previous year
  - type 1 or type 2 diabetes
  - history of congestive heart failure
  - current use of oral glucocorticoids

The Royal College of General Practitioners has produced a toolkit – TARGET (Treating Antibiotics, Guidance, Education, Tools). It includes a range of resources that can be used to support prescribers' and patients' responsible antibiotic use and aid with difficult conversations with regard to antibiotic prescribing. These include leaflets for the patients which aim to increase their confidence to self-care. They include information on illness duration, self-care advice, prevention advice and information on when to re-consult. Posters and videos for the TV in the waiting room are also available.

An online tool, the Fever PAIN Clinical Score, can also be used to determine whether or not a patient needs an antibiotic when they present with a sore throat. The score consists of five items:

- **Fever during previous 24 hours**
- **Purulence**
- **Attend rapidly (≤3 days)**
- **Very inflamed tonsils**
- **No cough/coryza**

Using the sore throat tool enables rapid calculation of the score, gives a treatment guide and provides a summary to cut and paste into the notes.

If the patient is still worried, issuing them with a delayed antibiotic prescription can be an effective strategy.

A paper published in the *BMJ* in March 2014 by Paul Little, Professor of Primary Care Research, University of Southampton and Chair of the NICE 'Respiratory tract infections (self-limiting): prescribing antibiotics' guideline, found that patients judged not to need immediate antibiotics but given a delayed antibiotic prescription resulted in fewer than 40% of patients using antibiotics.[1] Importantly, when these patients were interviewed again they said they would be less likely to come back to the doctor in future because they understood that antibiotics were unlikely to resolve a self-limiting infection. Patients given a delayed antibiotic had the same symptom outcomes as those given an immediate prescription.

When the no antibiotic prescribing strategy is adopted, patients should be offered:

- Reassurance that antibiotics are not needed immediately because they are unlikely to make a significant difference to symptoms and may have side effects
- A clinical review if their condition worsens or becomes prolonged

When the delayed antibiotic prescribing strategy is adopted, patients should be offered:

- Reassurance that antibiotics are not needed immediately because they are unlikely to make a significant difference to symptoms and may have side effects
- Advice about using the delayed prescription if symptoms are not starting to settle in accordance with the expected course of the illness or if a significant worsening of symptoms occurs
- Advice about re-consulting if there is a significant worsening of symptoms despite using the delayed prescription.

Community Acquired Pneumonia (CAP)

The typical symptoms of CAP are acute onset cough, fever, breathlessness and pleuritic chest pain. The BTS Guidelines on Community Acquired Pneumonia 2009 state that a diagnosis of CAP should be considered in the presence of typical symptoms and a patient who is systemically unwell (eg, temperature >38°C), presence of new focal signs in the chest and no other obvious explanation for these signs.

Recent NICE guidelines on pneumonia say that in primary care a chest X-ray is not essential to make a diagnosis of CAP. They recommend that a point of care C-reactive protein (CRP) blood test should be used to help decide whether patients presenting with mild pneumonia need antibiotics. However, Dr Gruffydd Jones says this is an extra refinement which is not currently available for most clinicians in UK general practice. The test is carried out routinely in a number of other countries but there is a cost issue about buying the equipment for GP surgeries in the UK. For many GPs, CRP testing has to be carried out in a local laboratory.

NICE advises:

- Do not routinely offer antibiotics if the CRP concentration is <20 mg/L
- Consider a delayed antibiotic prescription if the CRP concentration is 20–100 mg/L
- Offer antibiotic therapy if the CRP concentration is >100 mg/L

NICE also advises GPs to use the CRB65 risk score when making a judgement about whether patients should be referred to hospital. The CRB65 score assigns points based on the criteria of **C**onfusion, raised **R**espiratory rate (>30/min in adults) low **B**lood pressure (<90/60) and older age (≥65). NICE says GPs can consider home-based care for patients with a score of zero, but should consider hospital assessment for other patients, particularly those with a score of two or higher.

Dr Gruffydd Jones says that clinical judgement is still important, especially in the systemically unwell patient.

Treatment of CAP

The vast majority of patients with CAP have a mild form of the disease and can be managed effectively in the community by GPs.

NICE says that, if an antibiotic is needed, patients should be given a five-day course of a single antibiotic (eg, amoxicillin 500 mg tds or clarithromycin 500 mg tds) and asked to come back if their symptoms do not improve within 3 days. Patients should be told their fever will subside within a week but it may take up to 6 months for them to get completely back to normal.

Management of acute cough in children and adults

Acute cough is a common presentation, and whether it's a child or an adult, it is usually associated with a viral upper RTI. In the absence of any significant co-morbidity, acute cough is likely to be self-limiting but 10–15% of patients return within 1 month.

Dr Gruffydd Jones says the most important differential diagnosis of acute cough in adults is: Does the child have pneumonia and are they are going to require antibiotics?

He recommends the following safety net approach: ask patients to report back if their cough is not better in 3 weeks because this may be the first indication of a chronic condition. In a child it could be the first presentation of asthma or bronchiectasis and it is important to remember an inhaled foreign body. In particular, a child who has a

persistent wet cough for more than 4 weeks may have persistent bacterial bronchitis, a condition which might need a 2–4-week course of broad-spectrum antibiotics.

In an adult it may be the first presentation of COPD, bronchiectasis or lung cancer. 'Red flags', which are indications for further investigation in adults, include haemoptysis, prominent systemic illness and suspicion of lung cancer.

Bronchiolitis

Bronchiolitis is the most common disease of the lower respiratory tract during the first year of life.

Symptoms include:

- a rasping and persistent dry cough
- rapid or noisy breathing
- brief pauses in breathing
- feeding less and having fewer wet nappies
- vomiting after feeding
- being irritable

In primary care the condition may be confused with the common cold, although the presence of lower respiratory tract signs (wheeze and/or crackles on auscultation) in an infant would be consistent with bronchiolitis.

The symptoms are usually mild, may only last a few days and can be managed at home without needing treatment. In some cases, the disease can cause severe illness and infants will need to be treated in hospital.

Bronchiolitis is a viral infection so antibiotics are not indicated. NICE says corticosteroids are not recommended.

Learning objectives

After reading this article you will understand:

- How to deal with a self-limiting RTI
- When antibiotics should be prescribed for an RTI
- How to deal with patients who demand an antibiotic when they don't need one

Ideas for further study and reflection:

- Conduct a search of patients who were given antibiotics for an RTI and ask yourself whether those antibiotics were prescribed appropriately
- Read the NICE guideline 'Antimicrobial stewardship: system and processes for effective antimicrobial medicine use' to find out more about how to use antibiotics effectively
- Are you confident you could spot when a respiratory infection is CAP? Read up the BTS and NICE guidance

References

1. Little P, Moore M, Leydon G, *et al*. Delayed antibiotic prescribing strategies for respiratory tract infections in primary care: pragmatic, factorial, randomised controlled trial. *BMJ* 2014;**348**:g1606 http://www.bmj.com/content/348/bmj.g1606

The advice in this article has been collated from the following guidelines:

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- BTS guidelines on the management of community-acquired pneumonia in adults 2009. https://www.brit-thoracic.org.uk/guidelines-and-quality-standards/community-acquired-pneumonia-in-adults-guideline
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- TARGET Antibiotic Toolkit. http://www.rcgp.org.uk/clinical-and-research/toolkits/target-antibiotic-toolkit.aspx
- Fever PAIN Clinical Score. https://ctu1.phc.ox.ac.uk/feverpain/index.php

Continued on page 36...

A logical choice

of maintenance treatment to help prevent exacerbations of COPD

Chiesi

Trimbow®

beclometasone/formoterol/
glycopyrronium (87/5/9 mcg)

a combination of 3 established compounds in an extrafine formulation

Inspired logic

Trimbow is indicated for maintenance treatment in adult patients with moderate to severe COPD who are not adequately treated by a combination of an inhaled corticosteroid and a long-acting β_2-agonist (for effects on symptoms control and prevention of exacerbations see section 5.1 of the SPC)

Prescribing information can be found overleaf

CHTRI20170962F(1) Oct 2017

Prescribing Information

Trimbow 87/5/9 Pressurised Metered Dose Inhaler (pMDI) Prescribing Information
Please refer to the full Summary of Product Characteristics (SPC) before prescribing. **Presentation:** Each Trimbow 87/5/9 pMDI delivered dose contains 87micrograms (mcg) of beclometasone dipropionate (BDP), 5mcg of formoterol fumarate dihydrate (formoterol) and 9mcg of glycopyrronium. This is equivalent to a metered dose of 100mcg BDP, 6mcg formoterol and 10mcg glycopyrronium. **Indications:** Maintenance treatment in adult patients with moderate to severe chronic obstructive pulmonary disease (COPD) not adequately treated by a combination of an inhaled corticosteroid (ICS) and a long-acting $beta_2$-agonist (for effects on symptoms control and prevention of exacerbations see section 5.1 of SPC). **Dosage and administration:** For inhalation in adult patients (≥18 years). 2 inhalations twice daily (bd). Can be used with the AeroChamber Plus® spacer device. BDP in Trimbow is characterised by an extrafine particle size distribution which results in a more potent effect than formulations of BDP with a non-extrafine particle size distribution (100mcg of BDP extrafine in Trimbow are equivalent to 250mcg of BDP in a non-extrafine formulation). **Contraindications:** Hypersensitivity to the active substances or to any of the excipients. **Warnings and precautions:** Not for acute use in treatment of acute episodes of bronchospasm or to treat COPD exacerbation. Discontinue immediately if hypersensitivity or paradoxical bronchospasm. *Deterioration of disease:* Trimbow should not be stopped abruptly. *Cardiovascular effects:* Use with caution in patients with cardiac arrhythmias, aortic stenosis, hypertrophic obstructive cardiomyopathy, severe heart disease, occlusive vascular diseases, arterial hypertension and aneurysm. Caution should also be used when treating patients with known or suspected prolongation of the QTc interval (QTc > 450 milliseconds for males, or > 470 milliseconds for females) either congenital or induced by medicinal products. Trimbow should not be administered for at least 12 hours before the start of anaesthesia as there is a risk of cardiac arrhythmias. Caution in patients with thyrotoxicosis, diabetes mellitus, phaeochromocytoma and untreated hypokalaemia. Increase in pneumonia and pneumonia hospitalisation in COPD patients receiving ICS observed. Clinical features of pneumonia may overlap with symptoms of COPD exacerbations. Systemic effects of ICS may occur, particularly at high doses for long periods, but are less likely than with oral steroids. These include Cushing s syndrome, Cushingoid features, adrenal suppression, growth retardation, decrease in bone mineral density, cataract, glaucoma and more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression and aggression. Use with caution in patients with pulmonary tuberculosis or fungal/viral airway infections. Potentially serious hypokalaemia may result from $beta_2$-agonist therapy. Formoterol may cause a rise in blood glucose levels. Glycopyrronium should be used with caution in patients with narrow-angle glaucoma, prostatic hyperplasia or urinary retention. Use in patients with severe hepatic or renal impairment should only be considered if benefit outweighs the risk. **Interactions:** Since glycopyrronium is eliminated via renal route, potential drug interactions could occur with medicinal products affecting renal excretion mechanisms e.g. with cimetidine (an inhibitor of OCT2 and MATE1 transporters in the kidney) co- administration, glycopyrronium showed a slight decrease in renal excretion (20%) and a limited increase in total systemic exposure (16%). Possibility of systemic effects with concomitant use of strong CYP3A inhibitors (e.g. ritonavir, cobicistat) cannot be excluded and therefore caution and appropriate monitoring is advised. *Related to formoterol:* Non-cardioselective beta-blockers (including eye drops) should be avoided. Concomitant administration of other beta-adrenergic drugs may have potentially additive effects. Concomitant treatment with quinidine, disopyramide, procainamide, antihistamines, monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants and phenothiazines can prolong the QTc interval and increase the risk of ventricular arrhythmias. L-dopa, L-thyroxine, oxytocin and alcohol can impair cardiac tolerance towards $beta_2$-sympathomimetics. Hypertensive reactions may occur following co-administration with MAOIs including drugs with similar properties (e.g. furazolidone, procarbazine). Risk of arrhythmias in patients receiving concomitant anaesthesia with halogenated hydrocarbons. Concomitant treatment with xanthine derivatives, steroids or diuretics may potentiate a possible hypokalaemic effect of $beta_2$-agonists. Hypokalaemia may increase the likelihood of arrhythmias in patients receiving digitalis glycosides. *Related to glycopyrronium:* Co-administration with other anticholinergic-containing medicinal products is not recommended. *Excipients:* Presence of ethanol may cause potential interaction in sensitive patients taking metronidazole or disulfram. **Fertility, pregnancy and lactation:** Should only be used during pregnancy if the expected benefits outweigh the potential risks. Children born to mothers receiving substantial doses should be observed for adrenal suppression. Glucocorticoids and metabolites are excreted in human milk. It is unknown whether formoterol or glycopyrronium (including their metabolites) pass into human breast-milk but they have been detected in the milk of lactating animals. Anticholinergic agents like glycopyrronium could suppress lactation. A risk/benefit decision should be taken to discontinue therapy in the mother or discontinue breastfeeding. A decision must be made whether to discontinue breastfeeding or to discontinue/abstain from therapy. **Effects on driving and operating machinery:** None or negligible. **Side effects:** *Common:* pneumonia (in COPD patients), pharyngitis, oral candidiasis, urinary tract infection, nasopharyngitis, headache, dysphonia. *Uncommon:* influenza, oral fungal infection, oropharyngeal candidiasis, oesophageal candidiasis, sinusitis, rhinitis, gastroenteritis, vulvovaginal candidiasis, granulocytopenia, dermatitis allergic, hypokalaemia, hyperglycaemia, restlessness, tremor, dizziness, dysgeusia, hypoaesthesia, otosalpingitis, atrial fibrillation, electrocardiogram QT prolonged, tachycardia, tachyarrhythmia, palpitations, hyperaemia, flushing, cough, productive cough, throat irritation, epistaxis, diarrhoea, dry mouth, dysphagia, nausea, dyspepsia, burning sensation of the lips, dental caries, rash, urticaria, pruritus, hyperhidrosis, muscle spasms, myalgia, pain in extremity, musculoskeletal chest pain, dysuria, urinary retention, fatigue, asthenia, C-reactive protein increased, platelet count increased, free fatty acids increased, blood insulin increased, blood ketone body increased, blood cortisol decreased. *Rare:* Lower respiratory tract infection (fungal), hypersensitivity reactions, including erythema, lips, face, eyes and pharyngeal oedema, decreased appetite, insomnia, hypersomnia, angina pectoris (stable and unstable), ventricular extrasystoles, nodal rhythm, sinus bradycardia, blood extravasation, hypertension, paradoxical bronchospasm, oropharyngeal pain, angioedema, nephritis, blood pressure increased, blood pressure decreased. *Very rare:* thrombocytopenia, adrenal suppression, glaucoma, cataract, dyspnoea, growth retardation, peripheral oedema, bone density decreased. *Unknown frequency:* psychomotor hyperactivity, sleep disorders, anxiety, depression, aggression, behavioural changes (Refer to SPC for full list of side effects). **Legal category:** POM **Packs and price:** £44.50 1x120 actuations. **Marketing authorisation No:** EU/1/17/1208/002 **UK Distributor:** Chiesi Limited, 333 Styal Road, Manchester, M22 5LG. **Date of preparation:** Jun 2017. AeroChamber Plus® is a registered trademark of Trudell Medical International.

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Chiesi Limited on 0800 0092329 (GB), 1800 817459 (IE).

Trimbow®
beclometasone/formoterol/
glycopyrronium (87/5/9 mcg)

Continued from page 34...

Feedback from our Lay Reference Group

We asked our Lay Reference Group for their views on antibiotics and delayed prescriptions. They all said they were aware of the issues around antimicrobial resistance and would take antibiotics only if they really needed them.

Barbara Preston, who has bronchiectasis, says she routinely takes azithromycin 3 times a week because this reduces the number of courses of other antibiotics she needs to take when she gets an infection from eight or nine to two to three a year. She says she needs to take antibiotics for minor infections otherwise they take a hold and then she has to take a stronger course of medication.

"I really worry about taking antibiotics so often, not so much for my sake, as I will almost certainly become immune to the antibiotics I take eventually, but for the future of world medicine. I do worry that I'm adding to the present crisis of antibiotic resistance," she says.

Amanda Roberts, who has asthma, is also reluctant to take antibiotics. On the few occasions she is struggling to keep a lid on her asthma despite stepping up her respiratory medications, she has been offered antibiotics by her GP but she says she only takes them 'in extremis'.

Neil Jackson, who has who has alpha-1 antitrypsin deficiency, says if he was given a delayed prescription for an antibiotic he would hope this would be accompanied by a detailed conversation with the prescriber about when to take it. He said he would also find it helpful for that information to be written down as he would probably forget it after leaving the surgery if an infection was making him feel poorly.

This article was first published in *Primary Care Respiratory Update* in December 2015 and has been updated, edited and adapted for republication in 2018.

Supported self-management case history

Childhood asthma and respiratory infection

In the second of our series of snapshot case vignettes aimed at illustrating self-management opportunities Dr Iain Small brings you the case of Chelcie. Three healthcare professionals have provided their feedback on the case. How would you respond?

Asthma - Case 2

Chelcie is a 7-year-old girl who presents to the practice with cough, headache and fever. She has had this for 3 days, has no rash or signs of sepsis.

As an infant Chelcie had eczema, particularly in her flexures, although for the past 2 years her skin has improved. A clinical diagnosis of asthma was made by the practice nurse when she was 4 years old, after she was given a 6-week course of Clenil (pMDI and spacer) and her symptoms of exercise-induced cough and wheeze and night time cough improved.

This is the third time this winter she has been unwell in a similar fashion and she never really seems to have 'got out of the bit' for 3–4 months.

On examination Chelcie has a temperature of 38°C, rhinorrhoea, a few high-pitched inspiratory and expiratory rhonchi and her peak flow is well performed at 165 L/min.

Chelcie's mother asks a number of questions:

- Is this illness her asthma or is it infection?
- Would she benefit from antibiotics?
- Would she benefit from increasing her Clenil, or perhaps oral corticosteroids?
- How much of this could the family do themselves to save bothering the Health Centre?

As a practice, you have a very clear policy in favour of supported self-management, and a higher than average record of issuing written self-management advice. How would you respond?

Response

Laura Rush, Primary Care Nurse, Somerset

Is this illness her asthma or is it infection?

Chelcie appears to be suffering from a viral respiratory tract infection which has caused a flare-up of her asthma symptoms. In view of her temperature I would want to rule out any bacterial infection (throat, sinus, chest).

Would she benefit from antibiotics?

Antibiotics have no role in the treatment of a viral infection and they will only make a difference to a bacterial infection. Taking antibiotics inappropriately can cause the development of antibiotic resistance and also side effects.

Would she benefit from increasing her Clenil, or perhaps oral corticosteroids?

To understand the severity of this episode, I would like to know:

- Best peak flow rate for comparison

- Pulse, respiratory rate and oxygen saturations
- Short-acting beta agonist (SABA) usage for this episode

Depending on clinical assessment, I would advise treating this episode with regular use of SABA and an increased dose of Clenil with reassessment in 3–5 days. Paracetamol would help to manage Chelcie's headache and temperature. I would give emergency advice highlighting the importance of urgent review with her GP if worsening and give emergency OOH details. In a more severe episode, I would discuss with a GP regarding a 3-day course of oral corticosteroids with review.

This is Chelcie's third wheezing episode this winter. If she is compliant with her Clenil with good inhaler technique, her asthma may be undertreated and I would advise increasing her preventer therapy by adding a long-acting beta agonist in a combination device with her inhaled corticosteroid (ICS) in line with BTS/SIGN 2016.

I would enquire about any changes triggering these episodes such as in lifestyle, socially, at home/family, any new pets or smokers in the household.

How much of this could the family do themselves to save bothering the Health Centre?

To enable the family to manage similar episodes at home, a self-management plan could be discussed. This could include the Asthma UK child action plan to recognise and address worsening control personalised to include symptoms specific to Chelcie, highlighting when to increase SABA use and ICS, when to seek medical attention and what to do in an asthma attack.

The following would be discussed with the family and incorporated into the plan:

- Family's understanding of asthma, goals of treatment and dangers of poorly controlled asthma
- Chelcie's current asthma control, her goals and expectations
- Triggers
- Compliance with ICS
- Inhaler technique and use of chamber
- Annual flu vaccination
- Regular asthma reviews

Response

Dr Duncan Keeley, Executive Committee Member, PCRS-UK

On what I know so far, Chelcie probably has asthma and this is an intercurrent viral infection on a background of poor control, but I want to know more. In recent months, has she been using her preventer inhaler? With a spacer and correct technique? What dose is she using? Has she had exercise-induced cough and wheezing between her recent illnesses? Does she get a loose cough and fever with her illnesses to suggest the possibility of recurrent chest infection? When she is wheezy, does salbutamol by spacer help? I want to be a bit careful about the diagnosis, get her to do a couple of weeks of peak flow monitoring, and consider a chest x-ray if the history and clinical course suggest something other than asthma.

Assuming I'm happy for now with the asthma diagnosis, I'd check her spacer technique. I'd restart the Clenil if she's stopped it or, if not, double it to a maximum of 400 µg twice daily for 2–4 weeks maximum to see if this gets her better. I wouldn't use antibiotics or oral steroids.

What happens next depends on the 2–4-week review. If she's better – and the peak flow chart supports the asthma diagnosis – I'd gradually wind down the Clenil dose towards 100 µg twice daily. If things don't fit with asthma or she's no better, she may need further investigation or a referral.

Could the family do all this themselves? It was right to bring Chelcie in for assessment until an asthma diagnosis is clear and she is well. She needs a written self-management plan if she hasn't already got one. Once all's well, this kind of brief increase in her inhaled steroid dose to get symptoms back under control can be part of that plan – with a clear understanding that we have an open door if things aren't going right.

Response

Katherine Hickman, GP, Leeds, PCRS-UK Conference Co-Chair

Establish early on in the consultation their ideas, concerns and expectations. Explain that her symptoms are consistent with a virus. Currently her PEFR is satisfactory, but talk to them about the need to recognise viral illnesses as a potential trigger for worsening of Chelcie's asthma. There is nothing in the presentation that would suggest that antibiotics would be beneficial, and providing them with a TARGET Treating Your Infection – Respiratory Tract Infection (RTI)[1] could help aid this discussion and help them to recognise worsening signs and symptoms. Always consider differential diagnosis and be on the lookout for more serious underlying conditions such as pneumonia. Safety net by ensuring that, if Chelcie's cough is not better in 3 weeks, ensure she comes back. Ask about the possibility of an inhaled foreign body. If she has a persistent wet cough for more than 4 weeks she may have persistent bacterial bronchitis, a condition which might need a 2–4-week course of broad-spectrum antibiotics.[2]

A study by Taylor and Pinnock[3] established 14 potential support interventions for self-management. The authors state that not all these interventions are necessarily effective, appropriate or even evaluated in every long-term condition. A number of these, though, could be used with Chelcie.

This visit is a golden opportunity to establish what Chelcie and her mum understand about asthma, the reasons why she should be taking regular ICS, her inhaler technique and her compliance. Providing her with links to online videos of inhaler technique[4] could help to ensure that she knows how to take her spacer/MDI correctly if she is ever unsure. If she is missing doses, try and establish what is the trigger for when she remembers to take her inhaler and how can we help her establish a routine twice a day. Has Chelsie got an asthma management plan and, if so, is she using it? Again, this is an opportunity to go through it with her. By highlighting other useful resources including Asthma UK and their telephone advice line, 111, pharmacist, Babylon and/or PushDoctor, we can start to help them feel confident in safely managing her asthma outside of the clinical setting.

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Comments and summary from the editor

Dr Iain Small, Editor *Primary Care Respiratory Update*

Our experts have highlighted three important issues around what makes good, effective SUPPORTED self-management.

Firstly, ensuring that everyone involved is confident in the initial diagnosis. We know that concordance with pharmacological therapy has as its primary tenants a belief in the diagnosis, and a belief that the treatment will bring improvement. Reviewing the diagnosis in response to treatment is not only good clinical practice, but it allows the ongoing support that Chelcie and her family will need, helping them to understand the condition Chelcie has, and their role in its treatment.

Secondly, a knowledge of 'what to do next'. Our experts discuss the scope for patient-initiated therapy change in response to changes in Chelcie's symptoms, both for better and for worse. Giving a family the confidence to recognise when to do this, and the power and support to go ahead will reap its own reward in symptom control, mitigation of future risk and reduced exposure to unnecessary treatment.

Finally, knowing what to do in an emergency. A child with asthma will be reliant on self/parent/guardian-initiated treatment interventions well ahead of any interventions delivered by health professionals. The recent headlines remind us YET AGAIN that delaying emergency treatment never ends well, and may end in tragedy. Taking time to encourage Chelcie's family to feel comfortable in administering emergency treatment (as part of her support team) and to have the same conversation at school, clubs, or wherever Chelcie may find herself at risk may be the safety net she needs.

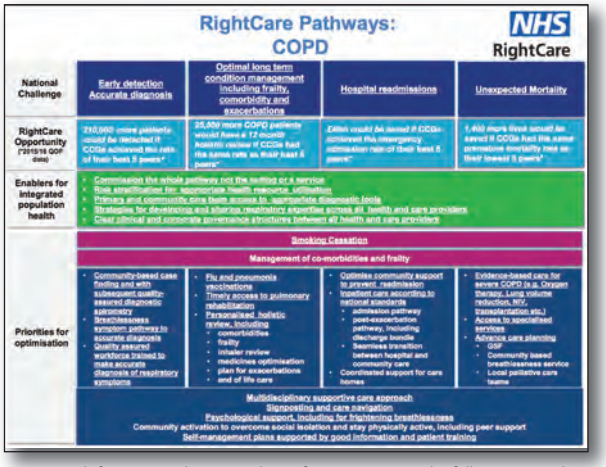
Policy Round-Up

Bronwen Thompson, *PCRS-UK Policy Advisor*

A summary of the latest developments in the UK health services, including any major new reports, guidelines and other documents relevant to primary care respiratory medicine

Improving COPD – where to start?

All round the country health boards and CCGs and other organisations planning healthcare are scratching their heads about the significant burden COPD places on the NHS. They see high emergency admissions; they see undiagnosed patients presenting to emergency departments for the first time; they see frail older people with multimorbidities struggling with their breathing; they see high mortality rates. But how do they know where to start to address the burden and improve outcomes?



Search for 'NHS RightCare pathway for COPD' to see the full resource online.

In January, RightCare – a division of NHS England focused on identifying unwarranted variation and therefore the opportunity for improvement – published a resource to help. In 2017 they worked with respiratory stakeholder groups to identify the major areas for improvement, review the evidence for what works and to produce a succinct output to guide organisations on where to place their effort to improve the burden COPD places on patients and the NHS. The output is a pathway for COPD – condensed into a single summary chart and backed up by tables indicating the supporting evidence. Finally, there are examples of initiatives which have been completed or are underway, which demonstrate that the suggested improvements are achievable in practice, not just theoretical. RightCare is all about supporting the implementation of evidence-based improvement.

PCRS-UK made a major contribution during the development of this initiative and we have endorsed the output because we think it is guidance that can avoid organisations reinventing the wheel or committing to initiatives where the evidence for effectiveness is weak or non-existent. It covers the full pathway of care – from ensuring early detection with accurate diagnosis through to optimising long-term management to reduce exacerbations, hospital admissions and premature mortality.

> *"The pathway provides a national case for change and a set of resources to support local health economies to concentrate their improvement efforts where there is greatest opportunity to address variation and improve population health"*
>
> RightCare

Asthma guidelines – confused?

It could almost have been choreographed; no sooner had NICE published their first guideline for asthma in November 2017 than BTS/SIGN announced that they would be starting the updating process for the 2016 British Asthma Guideline. So at present we have two asthma guidelines – one from BTS/SIGN which covers most aspects of asthma care comprehensively and the new NICE guideline which covers diagnosis, monitoring and management, but does not offer guidance on inhaler devices, the management of acute attacks or difficult asthma, asthma in adolescents, in pregnant women and on occupational factors.

However, the good news is that both BTS and PCRS-UK have provided some support to busy clinicians who are keen to follow best practice guidance. In December, BTS published a response to the NICE guideline in *Thorax*, highlighting similarities and differences from the BTS/SIGN asthma guideline. This is a very clear synopsis of the way the guidelines may differ from each other. One of the key differences between NICE and BTS/SIGN methodologies is that, while both review and evaluate the clinical evidence, NICE also takes a health economic viewpoint. It reviews the cost effectiveness evidence, and undertakes a health economic analysis in order to assess which are the most cost

effective approaches and interventions. In this way the NICE guideline gives us information about asthma diagnosis and management which we have not had in a guideline before. In February 2018 PCRS-UK published a consensus statement after reviewing both guidelines. This sets out a pathway of care which it believes is practical to implement in primary care, without significant reorganisation of services or significant new investment. This statement is also included in this edition of *PCRU* (see pages 9-14). NICE itself acknowledges that its guidance will take time to put into everyday practice so, in the short-term, PCRS-UK's consensus statement on asthma care will guide professionals in primary and community care in providing high quality asthma care.

PCRS-UK has not been shy in repeatedly stating its view that what the UK needs is a single comprehensive guideline for asthma. In January *BMJ* published an editorial by Dr Duncan Keeley and Dr Noel Baxter (Policy Lead and Chair of Executive Committee, respectively) in which they highlighted the difficulty posed for generalists in primary care by having more than one guideline, and calling for NICE and BTS/SIGN to collaborate on creating a single guideline for the UK.

Meanwhile, NICE consulted with stakeholders in January on the key areas for improvement in asthma care as a starting point for reviewing the NICE asthma quality standard due out later this year. This will identify the key areas where improvements are needed in asthma care and will base the guidance on the NICE asthma guideline for asthma diagnosis, monitoring and management.

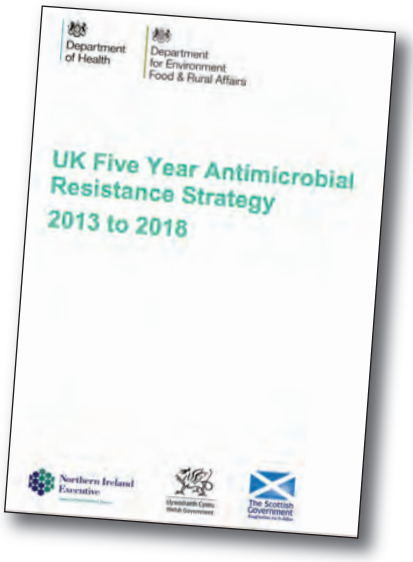
We encourage you to study the PCRS-UK consensus statement as the place to find practical and implementable guidance to help you through the maze of asthma guidelines.

Going forward, PCRS-UK will continue to press for a single comprehensive guideline for asthma for the UK and will continue to publish pragmatic, consensus-based guidance for the benefit of primary care.

Tackling respiratory infections and appropriate use of antibiotics

It's been a tough year for respiratory infection with various kinds of flu circulating and front-line health services put under unprecedented pressure, so making appropriate use of treatment is the theme for this issue of *PCRU*. With concerns about antimicrobial resistance increasing, there is a wealth of guidance on the appropriate use of anti-infectives.

- **UK Five Year Antimicrobial Resistance Strategy 2013 to 2018**: We are now in the final year of a 5-year national strategy to address concerns about resistance and the overall goal of this new cross-government UK strategy is to slow the development and spread of antimicrobial resistance by focusing activities around three strategic aims:
    - improve the knowledge and understanding of antimicrobial resistance



    - conserve and steward the effectiveness of existing treatments
    - stimulate the development of new antibiotics, diagnostics and novel therapies
- **Resource handbook on antimicrobial resistance**: This is designed to collate in one place all the guidance on optimal approaches to minimising resistance. It is more strategic and will be helpful to those involved in commissioning and planning services. Public Health England (PHE) updated their handbook in 2017.
- **Management of infection guidance for primary care for consultation and local adaptation:** PHE also issued specific guidance targeted at primary care on the appropriate use of antibiotics. This is a thorough and evidence-based piece of guidance, which is cross-referenced with guidance from NICE and SIGN (Scottish Intercollegiate Guideline Network). It aims:
    - to provide a simple, effective, economical and empirical approach to the treatment of common infections
    - to target the use of antibiotics and antifungals in primary care
    - to minimise the emergence of bacterial resistance in the community

  It advises on the most appropriate antibiotics to use for different types of infection, including upper and lower respiratory tract infection, in an easy-to-read table. It also includes charts that you can print out to display in your surgery waiting area.
- **NICE issued guidance**: on two respiratory infections in 2017 and early 2018 – acute sinusitis (NG79) and sore throat (NG84) – and a piece of guidance on changing risk-related behaviours in the general population in relation to antimicrobial stewardship (NG63). There is also guidance on developments in 'Managing common infections' which is likely to update the guidance from 2008 on prescribing antibiotics for self-limiting respiratory tract infections.

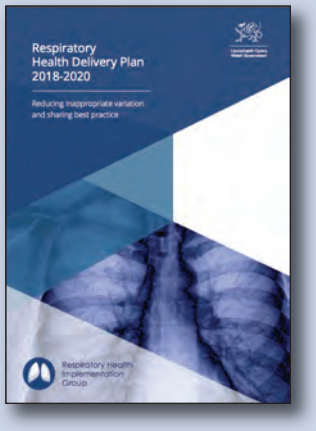
- **'Keep antibiotics working'**: In October 2017 a campaign was launched to engage the public on appropriate use of antibiotics. 'Keep antibiotics working' is designed to educate on when antibiotics will and won't work, and to minimise the demand for antibiotics from patients with infections which will resolve without antibiotics or need another kind of treatment.

  Why not become an antibiotic guardian?

This campaign, launched in 2014, is designed to engage everyone in the battle to manage antibiotic resistance. Professionals and laypersons are invited to make a pledge to make better use of antibiotics and help save these vital medicines from becoming obsolete. By mid-February almost 60,000 people had signed a pledge. There are resources and toolkits designed for healthcare workers in all four nations of the UK, tailored to the different healthcare systems and linking in to European Antibiotic Awareness Day and World Antibiotic Awareness Week. Scotland has produced a range of posters on antimicrobial awareness and England has a resources toolkit.

So why not sign the pledge to do what YOU can to improve antimicrobial resistance? www.antibioticguardian.com

In brief:



Wales has published a plan for improving the care of people with respiratory disease: 'Respiratory health delivery plan 2018–2020'. This is a 3-year plan which sets out the Welsh Government's vision for respiratory services in Wales and identifies the actions the NHS in Wales will take in response. This builds on the findings of the National audit for COPD in primary care in Wales which indicated some key areas for improvement in primary care. For example, the report highlights how they are trying to improve diagnosis by offering widespread training in spirometry, and how they are trying to improve the coding for COPD on GP systems so that the right people are receiving the right interventions. PCRS-UK commends this thorough approach to planning improvements in respiratory disease care and would be pleased to see the other three nations of the UK developing similar plans.

Want to improve your prescribing in asthma? NICE offers guidance on some key actions you can take to ensure that your prescribing for asthma conforms to evidence-based best practice. These include checking how many short-acting beta agonists (SABAs) patients are taking, titrating inhaled steroids to the lowest dose to maintain control, encouraging use of combination inhalers and routinely checking inhaler technique. (Asthma: medicines optimisation priorities KTT5 www.nice.org.uk/advice/ktt5) Also, Scotland has a publication in development on Quality respiratory prescribing – watch this space for some useful guidance ...

COPD audit programme – pulmonary rehabilitation (PR) audit published in December This report confirmed the improved outcomes that can be delivered through PR – fewer admissions to hospital, reduced lengths of stay and lower mortality. If you need data to support setting up a service in your area or defending or extending an existing one, then this is a great resource for you to argue the benefits of an effective PR service. (RCP NACAP Report: 'Pulmonary Rehabilitation: beyond breathing better')

Strong guidance on benefits of e-cigarettes Public Health England has published an evidence review of e-cigarettes and heated tobacco products (McNeil et al, 2018), which promotes e-cigarettes as an excellent way to help people quit smoking tobacco. Lack of understanding by smokers and the public of the relative risks of vaping versus smoking tobacco means that people are not switching away to safer forms of nicotine use to reduce harm from smoking. Vaping poses only a small fraction of the risks of smoking yet many thousands of smokers incorrectly believe that vaping is as harmful as smoking; around 40% of smokers have not even tried an e-cigarette. Yet e-cigarettes could be contributing to at least 20,000 successful new quits per year. E-cigarette use is associated with improved quit success rates and an accelerated drop in smoking rates across the country. Health professionals are encouraged to promote the use of e-cigarettes more actively alongside other forms of nicotine replacement to treat tobacco dependency.

Journal Round-Up

Each month the Primary Care Respiratory Academy, in partnership with the Primary Care Respiratory Update Editorial Board, publishes a series of informative summaries of studies and reviews in areas relevant to respiratory health in a primary or community setting. The summaries can be found online at http://www.respiratoryacademy.co.uk/clinical/journal-club/. Below is a selection of those published.

**** EDITOR'S CHOICE ****

Comparing the cancer potencies of emissions from vapourised nicotine products including e-cigarettes with those of tobacco smoke

William E Stephens *Tobacco Control* 2018;**27**:10–17 doi: 10.1136/tobaccocontrol-2017-053808

Vapourised nicotine products, such as electronic cigarettes (e-cigarettes), are rapidly growing alternatives to tobacco, acting as a method of nicotine delivery without the combustion of tobacco. Despite this, understanding of their safety is still under debate. Dr William Stephens from the University of St Andrews conducted a quantitative analysis to compare the relative cancer potencies between a number of nicotine products including tobacco smoke, e-cigarette vapours and heat-not-burn (HnB) devices. Most e-cigarette emissions studied demonstrated a mean lifetime cancer risk of <1% of tobacco smoke. However, some devices produced higher potencies, particularly under conditions of a higher voltage. When compared with nicotine inhalers, the relative risks for e-cigarettes and tobacco cigarettes were 11 and ~2700, respectively. HnB devices demonstrated lower cancer potencies than tobacco smoke by at least one order of magnitude, but higher than those found in most e-cigarettes. Dr Stephens concluded that, ensuring the e-cigarettes were used under optimal conditions (such as enabling lower device settings), the emissions produced are likely to have a lower carcinogenic potency than that found in tobacco smoke.

Effect of statins on COPD

Wen Zhang, Yi Zhang, Chuan-Wei Li, Paul Jones, Chen Wang & Ye Fan
Chest 2017;**152**(6):1159–68
doi: 10.1016/j.chest.2017.08.015

Therapy that improves the management of chronic obstructive pulmonary disease (COPD) is urgently needed. In a meta-analysis of 10 randomised controlled trials involving 1471 patients, Wen Zhang from Xinqiao Hospital, Beijing and his colleagues sought to determine the clinical efficacy of statin therapy in COPD. They observed that statin drugs improved exercise tolerance, pulmonary function and quality of life in patients with COPD. The authors also found that COPD patients with hyperlipidaemia, increased systemic inflammation or co-morbid cardiovascular disease (CVD) demonstrated more benefits from statin therapy than those without, and that there was no association between statin therapy and survival rates (although only a few trials in this analysis focused on that outcome). Findings support routine CVD assessment for COPD patients who have a cardiovascular indication for statin drug treatment, as it may confer benefits to the pulmonary system. They recommend running a large randomised controlled trial to test these hypotheses.

Effects of pulmonary rehabilitation on exacerbation number and severity in people with COPD

Elizabeth Moore, Roger Newson, Miland Joshi, *et al.*
Chest 2017;**152**(6):1188–202
doi: 10.1016/j.chest.2017.05.006

Acute exacerbations in chronic obstructive pulmonary disease (COPD) negatively affect health-related quality of life, and pulmonary rehabilitation (PR) is a key component of COPD management. Clear evidence of the benefits of PR on reducing hospital admissions is lacking, since there are no studies on the effect of PR in reducing hospital admissions or milder general practice (GP)-treated events, especially in patients with less severe COPD (who comprise most referrals for PR). In this cohort study, using primary care data from the UK Clinical Practice Research Datalink and Hospital Episode Statistics, Elizabeth Moore and colleagues compared the rates of hospitalised and GP-treated COPD acute exacerbations prior to and following PR. They found less than 10% of patients eligible for PR were referred, and that the number of acute exacerbations for patients referred for PR was no lower than for those who were not referred. PR had no detectable effect on exacerbation frequency. The authors proposed that the national COPD audit should monitor the content of rehabilitation more closely.

Comparison of a structured home-based rehabilitation programme with conventional supervised pulmonary rehabilitation: a randomised non-inferiority trial

Elizabeth J Horton, Katy E Mitchell, Vicki Johnson-Warrington, *et al.*
Thorax 2018;**73**(1):29–36
doi: 10.1136/thoraxjnl-2016-208506

Pulmonary rehabilitation (PR) is a high-value intervention for patients with COPD, and international guidelines recommend a programme over six weeks involving a package of supervised exercise and education. However, uptake for centre-based, supervised PR is poor. Home-based PR programmes offer an alternative, but evidence is lacking for the benefits of a standardised, unsupervised PR programme with no home visits by a physiotherapist or intensive monitoring. This study, reported by Elizabeth Horton (Coventry University) and colleagues, set out to determine whether a structured, home-based, unsupervised PR programme of activity, coping and education for COPD could be considered non-inferior to centre-based PR. Two hundred and eighty-seven COPD patients referred to PR were randomised to either centre-based PR or a structured, unsupervised home-based programme for seven weeks, including a hospital visit with a healthcare professional trained in motivational interviewing, a self-management manual and two telephone calls. The standardised home-based programme provided improvement in breathlessness and exercise endurance capacity of a similar level to conventional supervised PR, but further evidence is needed to determine conclusively whether the health benefits of standardised home-based PR are non-inferior or equivalent to supervised centre-based PR.

Physiotherapy breathing retaining for asthma: a randomised controlled trial

Anne Bruton, Amanda Lee, Lucy Yardley, *et al.*
Lancet Respir Med 2018;**6**:19–28
doi:10.1016/S2213-2600(17)30474-5

Many patients express interest in non-pharmacological self-management strategies such as breathing techniques. But although preliminary studies of breathing retraining have shown promising outcomes, such techniques are rarely used in practice. Anne Bruton (University of Southampton) and colleagues developed a self-guided breathing retraining intervention comprising a DVD and accompanying booklet (DVDB). Six hundred and fifty-six patients with asthma were randomised to receive standard care, the DVDB intervention or face-to-face breathing retraining. Benefit was assessed using the Asthma Quality of Life Questionnaire (AQLQ). At 12 months, mean AQLQ scores were significantly higher in the face-to-face and DVDB groups compared with standard care. Patient-reported benefits of the DVDB and face-to-face interventions included increased breathing control, reduced need for medication, increased relaxation and greater quality of life. Furthermore, an economic assessment found both interventions superior to standard care by providing equivalent clinical benefits at a lower monetary cost. The authors concluded that such a self-help breathing retraining intervention can be delivered conveniently and cost-effectively. However, they warned that it is not disease-modifying, and patients should be counselled on the need to use it to support, not replace, pharmacotherapy.

Fractional exhaled nitric oxide as a predictor of response to inhaled corticosteroids in patients with non-specific respiratory symptoms and insignificant bronchodilator reversibility: a randomised controlled trial

David B Price, Roland Buhl, Adrian Chan, *et al.*
Lancet Respir Med 2018;**6**:29–39
doi:10.1016/S2213-2600(17)30424-1

Patients with non-specific respiratory symptoms such as coughing and breathlessness present a significant challenge in primary care. Inhaled corticosteroids (ICS) are often prescribed to manage these symptoms, but concern regarding overuse has triggered calls to exercise more caution when prescribing these drugs. In a double-blind randomised controlled trial, David Price (University of Aberdeen) and colleagues from across the UK and Singapore evaluated the possible association between baseline fractional exhaled nitric oxide (FeNO) and response to ICS. Enrolled patients were aged 18–80 years with coughing, wheezing or breathlessness, no confirmed respiratory diagnosis, and less than 20% bronchodilator reversibility. After 2 weeks' assessment and 4 weeks' treatment with either ICS or placebo, a significant positive association was found. Patients with higher baseline FeNO levels were significantly more likely to be responsive to ICS treatment. The authors believe their findings support the use of FeNO measurement in primary care as a tool to reduce the unnecessary prescription of ICS to patients unlikely to benefit from such treatment.

Does antibiotic treatment duration affect the outcomes of exacerbations of asthma and COPD? A systematic review

Marie Stolbrink, Jack Amiry & John D Blakey
Chronic Respir Dis 2017; Published online 12 December 2017
doi:10.1177/1479972317745734

Most asthma and COPD exacerbations are considered to be non-bacteriological, yet antibiotic prescription for exacerbations is a common clinical practice. However, few studies have investigated the optimal duration of antibiotic treatment. Marie Stolbrink and colleagues from Liverpool conducted a systematic review, following best-practice guidance from the Cochrane Collaboration, to gather evidence for antibiotic prescriptions of various lengths. No relevant studies were found in patients with asthma, but 10 studies in COPD patients were included in the review. They found no significant association between prescription length and clinical response, bacteriological eradication in sputum, spirometric change, inflammatory markers or time to new exacerbations – but prescriptions shorter than 5 days were associated with a lower rate of adverse events. Many of the existing studies were un-

dertaken more than 10 years ago, when standards for stratifying COPD severity were not widely adopted. The authors therefore believe current evidence supports the use of shorter antibiotic courses for COPD exacerbations, but call for further research to determine whether this is true in the context of present-day COPD.

Efficacy of supervised maintenance exercise following pulmonary rehabilitation on health care use: a systematic review and meta-analysis

Alex R Jenkins, Holly Gowler, Ffion Curtis, *et al*.
Int J Chron Obstruct Pulmon Dis 2018;**13**:257–73
doi:10.2147/COPD.S150650

Pulmonary rehabilitation (PR) is a known high-value health intervention for those diagnosed with COPD. However, the health benefits associated with PR are often short term, with the condition of most patients returning to baseline 12 months after treatment. Interest has therefore increased in exploring potential maintenance programmes that can help prolong the health benefits associated with PR. In this meta-analysis, Alex R Jenkins from the University of Lincoln and colleagues reviewed eight studies covering 790 COPD patients. Its aim was to explore the clinical benefits associated with continued supervised maintenance exercise programmes in COPD patients following PR as opposed to usual care. Results showed that implementing such exercise programmes significantly reduced the risk of at least one respiratory-cause hospital admission, along with the overall risk of an exacerbation in COPD patients. Reductions in length of stay and rate of respiratory-cause hospital admissions were also noted. The clinical significance associated with implementing maintenance programmes in COPD patients provides hope for improving patient outcomes and reducing healthcare use in COPD. The authors conclude that this is the start in a step towards building an evidence base for the use of continued maintenance exercise programmes in patients completing PR.

Independent determinants of disease-related quality of life in COPD – scope for non-pharmacologic interventions?

Sarah B Brien, Beth Stuart, Andrew P Dickens, *et al*.
Int J Chron Obstruct Pulmon Dis 2018;**13**:247–56.
doi:10.2147/COPD.S152955

Understanding key features that impair quality of life (QoL) in COPD patients may provide insight into potentially modifiable factors that could be targeted to reduce the effect of disease and aid patients' long-term management. Often, the QoL scores indicated in COPD patients have weak correlations with its physiologic factors, making this difficult to achieve. In this cross-sectional study, Sarah Brien from the University of Southampton and her colleagues analyse data from the Birmingham COPD cohort study to investigate factors independently associated with impaired QoL in patients with COPD. Several factors were highlighted as having a significant association with the COPD Assessment Test (CAT) scores, including but not limited to depression, illness perception and exercise capacity. By conducting a dominance analysis, breathlessness (20.2%) and illness perception (19.8%) were highlighted as the largest contributors to patient CAT scores, followed by dysfunctional breathing symptoms (17.5%) and depression (12.5%). Other variables contributed ≥5% to these CAT scores. The authors concluded that psychological factors are some of the main contributors to QoL impairment in patients with COPD. By exploring interventions targeted towards these main contributors, we can hope to improve QoL in COPD patients and improve their experience.

Effects of the "Living well with COPD" intervention in primary care: a comparative study

Claudia Steurer-Stey, Kaba Dalla Lana, Julia Braun, *et al*.
Eur Respir J 2018;**51**:1701375
doi: 10.1183/13993003.01375-2017

COPD self-management programmes aim to give patients the support and techniques required to effect change in their behaviour, reducing the risk of moderate and severe exacerbations and improving disease-specific and health-related QoL. This study, conducted by Claudia Steurer-Stey (University of Zurich) and her colleagues, aimed to compare key outcomes between COPD patients who participated in the 'Living well with COPD' (LWWCOPD) self-management intervention programme or who had undergone usual care in the COPD Cohort ICE COLD ERIC. Analysis of data collected from 467 patients (71 of whom had undergone the LWWCOPD intervention) demonstrated that patients undergoing self-management had improved health-related QoL and overall health status. Furthermore, use of this intervention considerably reduced the risk of moderate and severe exacerbations. The authors concluded that self-management coaching in primary care gives patients the skills to accurately manage their condition, aiding the reduction of exacerbation risk and improving patient QoL, meaning the incorporation of this intervention into COPD patient care can improve outcomes in patients with COPD.

Smoking duration alone provides stronger risk estimates of chronic obstructive pulmonary disease than pack-years

Surya P Bhatt, Young-il Kim, Kathy F Harrington, *et al*.
Thorax 2018 Jan 11 [Epub ahead of print]
doi:10.1136/thoraxjnl-2017-210722

The probability of a correct diagnosis of COPD relies on quantification of risk factors and symptom burden. Cigarette smoking is the strongest risk factor for COPD, and a dose-effect relationship exists between smoking and those who develop COPD, even though no precise estimate of a threshold effect is available. Smoking burden is measured in pack-years, but the relative contributions to structural lung disease of cigarettes smoked per day versus duration is unknown. Surya Bhatt of the University of Alabama has led a team in the analysis of cross-sectional data from a large multicentre cohort of current and former smokers. Detailed assessment of smoking history was made, including the

age at which patients started smoking, duration of smoking and the number of cigarettes per day. Smoking burden was also assessed using the conventional metric of pack-years. The primary outcome was airflow restriction (FEV1/FVC) and secondary outcomes included FEV1, computerised tomography (CT) emphysema, CT gas trapping, functional capacity and respiratory morbidity. Smoking duration provided stronger risk estimates of COPD than cigarettes smoked per day and the composite index of pack-years. Giving equal weightage to cigarettes smoked per day and duration might attenuate the measured risk of association between smoking and COPD, resulting in miscalculation and biased estimates of disease risk.

Oral prednisolone in preschool children with virus-associated wheeze: a prospective, randomised, double-blind, placebo-controlled trial

SJ Foster, MN Cooper, S Oosterhof, ML Borland

Lancet Respir Med 2018;**6**:97–106

doi:10.1016/S2213-2600(18)30008-0

One in three children under the age of three years will experience an episode of wheeze, with viruses assumed to be the triggering factor. The clinical course of wheeze in pre-school children is different from that of asthma in adolescents and adults, for whom a beneficial role of corticosteroid administration in reducing the need for hospital admission during asthma episodes has been shown. This evidence is more robust than that supporting corticosteroid use in paediatric wheeze exacerbations. Meredith Borland and colleagues from Perth, Australia have run a prospective, randomised, double-blind, placebo-controlled trial to assess the efficacy of oral prednisolone in children presenting to a paediatric emergency department with suspected virus-associated wheeze. Six hundred and twenty-four patients aged between two and six years were randomly assigned to a three-day course of either oral prednisolone or placebo once daily. Analysis of the study's primary hypotheses showed that placebo treatment was inferior to prednisolone in reducing the length of stay in hospital in these children. The greatest efficacy was seen in patients with either severe features of wheeze at presentation, receiving salbutamol before presentation or prior history of asthma. No other significant predictors were found.

Reasons for Accident and Emergency department attendance by people with chronic obstructive pulmonary disease or heart failure: recipients and providers' perspectives. An exploratory study

Jeong Su Lee, Heidi Lampp, Vivek Srivastava & Elizabeth Barley

BMJ Open Respir Res 2018;5:e000244

doi:10.1136/bmjresp-2017-000244

The 15 million people in England who are affected by one or more long-term conditions are frequent users of Accident and Emergency (A&E) services, especially those with heart failure (HF) and chronic obstructive pulmonary disease (COPD). The number of admissions for both conditions is reported to have increased for the past 10 years, and the literature suggests the decision to attend is considered by patients and community healthcare professionals to be exacerbation-driven and unavoidable. However, there is a gap in understanding the views of family members and hospital clinicians, with no known study comparing the three groups (patients, family members and hospital clinicians). An exploratory study identifying key factors contributing to A&E attendance was undertaken by Jeong Su Lee and co-workers across these three groups. Input came in the form of interviews with patients and their family members and a survey of hospital clinicians. All three parties agreed that severe exacerbation was the main reason for A&E attendance. The three key factors highlighted in relation to A&E attendance were: patients' health-seeking behaviour; perceptions about the services offered by general practitioners and A&E; and patients' attitudes towards managing their own conditions. Improving patient trust in their GP services might encourage more timely access of primary care services and a decrease in exacerbation-driven attendance in A&E.

PCRS-UK News Round-Up

PCRS-UK RESPIRATORY LEADERS PROGRAMME

The PCRS-UK Respiratory Leaders Programme has been established for over 10 years in its present form. I remember turning up to a workshop as an apprehensive delegate, feeling out of my depth but enthusiastic, learning loads and leaving all fired up and keen to push forward with ideas of how to improve care in my practice and beyond.

The next Respiratory Leaders Meeting is in Sheffield in June, and will continue in the same spirit as the first and every meeting since. Some of those delegates will be attending for the first time, some are returning. The theme of the June meeting is 'Bringing about change in practice'. We will explore ways of getting a project off the ground, engaging your team, setting goals and monitoring progress. Melissa Canavan and I will be co-chairing and we'll be joined again by Catherine Blackerby and a faculty of speakers and table facilitators. The workshop is free to PCRS-UK members, thanks to support from sponsors and substantial investment by PCRS-UK.

If you are a doctor, nurse, physiotherapist, pharmacist or commissioner and a member of PCRS-UK, you are very welcome to come along. For more information please see https://pcrs-uk.org/clinical-leadership-programme

Stephen Gaduzo
Respiratory Leaders Programme Board

2018 PRIMARY CARE RESPIRATORY ACADEMY

The 2018 Primary Care Respiratory Academy roadshow events start on 19 April with the first of our widespread Commissioning Platform events, which looks at how systems-based delivery drives efficiency and good outcomes for respiratory patents. The PCRS-UK leads for the Commissioning Platform, Noel Baxter and Sanjeev Rana, have spearheaded the development of an agenda combining practical interactive table activities, videos and signposting to tools that inform solutions to the problems commissioners face in providing best possible outcomes for their patients.

The Clinical Platform roadshows start on 3 May with 'Practical essentials in respiratory care'. This is the third year that Cogora in partnership with PCRS-UK have hosted this series of events, and feedback has confirmed that we need to continue to keep covering the basics while providing more opportunities for practical facilitated workshops. Presentations on 'Getting off to the right start' (with tips on making an early and accurate diagnosis) and 'Getting the disease management right' are embedded in a day of interactive sessions on spirometry and choosing the right inhaler device.

There are also short sharp presentations on a range of hot topics including managing the breathless patient and helping patients to quit smoking. The PCRS-UK leads Steve Holmes and Carol Stonham for the Clinical Platform have led the development of the programme, which is designed to both reaffirm and challenge the preconceptions of its audience.

Both the Clinical and Commissioning roadshows are supported by a suite of digital resources that consolidate learnings from the roadshows, and will continue to be developed throughout the year.

UPDATE ON PCRS-UK COMMITTEES

Following the recent membership elections, we are delighted to welcome Clare Cook to the PCRS-UK Executive. Clare, a community specialist respiratory physiotherapist, has been involved with the PCRS-UK Respiratory Leaders Programme for several years and is co-Chair of the Programme Board with Stephen Gaduzo. Joining Clare are Steve Holmes, Carol Stonham and Duncan Keeley, who were all re-elected to serve another term with the Executive.

In addition to the PCRS-UK Executive changes, we are also delighted to welcome Hetal Dhruve and Anna Murphy to the PCRS-UK Education Committee. Hetal and Anna are both pharmacists and we look forward to their valued input to the Committee.

It is always sad to see an active member stand down, but we are sure that Steph Wolfe will enjoy spending more time with her family when she retires. Steph has been a member of PCRS-UK for many years, joining first as an associate member of the old GPIAG. Steph was instrumental in changing the course of GPIAG as she campaigned hard for the organisation to open up nurse membership back in the 1990s. Steph was recognised for her valuable contributions in 2012 when she became an honorary member, and we are sorry to be losing her but we wish her well in her retirement. Says Carol Stonham, Nurse Lead and Vice Chair of PCRS-UK, "All of us non-doctors within PCRS-UK would not qualify for full membership had it not been for Steph. It was her quietly pushing the boundary back in the day of GPIAG that allowed nurses to become members, and later to sit on committees as equal members. Steph didn't accept that nurses couldn't be equal players. Now we have members from many healthcare backgrounds and our committees are representative of our varied membership and the team approach to healthcare.

"When the Practice Nurse Working Party was formed, Steph was at the helm leading the way with a vision of offering support to practice nurses working in an isolating environment. The Affiliated Nurse Groups Programme was born from this and Steph described a vision of great oaks growing from the acorns that were sprouting into life around the country. The programme continues successfully now supporting multidisciplinary groups in various stages of development.

"Personally, I have always looked up to Steph. She has a calm presence, when she speaks people listen. Steph is the great oak in our forest."

PCRS-UK WEBSITE: PROFESSIONAL DEVELOPMENT – ARE YOU FIT TO CARE?

We know that there is a wide variation in the standard of respiratory care provided to patients, as demonstrated by national reports such as the National Review of Asthma Deaths (NRAD) and the COPD Audit. This variation is affected not only by the services patients are engaged with/referred to but also the level of training, education and experience of the clinicians responsible for the provision of such care.

'Fit to Care' is a PCRS-UK publication aimed at providing guidance for commissioners and clinicians on the skills, knowledge and training required by healthcare professionals working with patients with a respiratory condition in a primary or community care setting, irrespective of their profession.

The professional development section of the PCRS-UK website has now been redeveloped and structured around this document, taking the three different levels of practice and demonstrating the relevant skills, knowledge and training required to practice at each level. In a user-friendly format which is easy to navigate, the professional development web pages help users review their own training requirements and provide links to publications, resources and relevant training opportunities to support healthcare professionals to develop their skills and knowledge. Try for yourself at https://pcrs-uk.org/professional-development

ARE YOU FIT TO PRACTISE?

Help us to find out the knowledge, skills and training of those delivering respiratory care and the barriers to getting additional training. We want to get as many healthcare professionals to participate in our survey to find out if members are practising respiratory care at the level to which they are trained to do so and explore the barriers to accessing further development and training.

Please join in and share the survey with your colleagues and complete the survey yourself at https://pcrs-uk.org/form/fit-care – it only takes just a couple of moments.

SECOND OPINION

Your respiratory questions answered...

Question:

I attended the PCRS conference in 2016 and there was a presentation by a physician who was talking about the use of blood eosinophil count as a useful criterion for inhaled corticosteroid use in patients with COPD. He also talked about its potential value in deciding whether oral steroids are appropriate for some patients when suffering an exacerbation. This spurred me on to look at the way we practice locally, as we seem to have a large number of patients accessing rescue packs with (sometimes) alarming frequency. As a colleague said, "We dish out rescue packs with antibiotics and steroids like sweeties".

So, given the increased risk of pneumonia and other steroid-related side effects, should all patient rescue packs contain oral corticosteroids or should we be looking at each patient individually and possibly using the blood eosinophil level as a clinical marker to identify a subgroup of patients who should take prednisolone and a group for whom risk would outweigh benefit?

We could potentially reduce unnecessary long-term side effects and also make a prescribing cost saving – a 'win-win' situation. I've just started to look at the evidence as to whether this is a reliable enough marker and how it can be used (if at all) to make these sort of decisions.

So, to my questions:

- Are there currently any pathways and local clinical guidelines out there that already incorporate this?
- Is there any convincing data to support this strategy? In my literature review I identified the Hull & East Riding COPD pathway, but they only talk about using blood eosinophil levels as a marker to decide on withdrawal of inhaled steroids, not oral.

Answer: a debate

Dr Iain R Small, *General Practitioner, Aberdeenshire*

In brief, there is little evidence to support the use of oral corticosteroids in COPD exacerbations (Professor Alyn Morice, the physician to whose presentation you refer, pointed this out with aplomb), but we all do it and patients seem to like them.

Working out which are 'infective' and which are 'inflammatory' exacerbations (should such differences genuinely exist) is extremely difficult in real time, and in primary care I believe it to be almost impossible.

SECOND OPINION

Your respiratory questions answered...

continued

The hypothesis that we can use blood eosinophil levels to help us in this regard has been generated from various post hoc analyses of the data from the recent large clinical trials whose primary end points were NOT directly related to your question. For the most part, the discussion surrounding blood eosinophilia in COPD relates more to trying to decide which patients are likely to gain benefit (rather than suffer harm) from inhaled corticosteroids compared with maximal bronchodilation through different physiological and pharmacological pathways.

I don't think at this stage we can say that the evidence supports a clinical strategy to use this marker as a predictor of when to use oral corticosteroids (although many eminent researchers in the field might disagree, particularly those who advocate 'treatable traits' as a way of identifying patient subgroups; see the classic paper by Agusti A *et al, Eur Respir J* 2016;**47**:410–19; doi: 10.1183/13993003.01359-2015). The cost saving you mention would be indirect as oral corticosteroids are inexpensive. Indirect cost savings around type 2 diabetes mellitus and osteoporosis, for example, do have potential.

There is a second issue worth considering, however. There have been a series of recent publications that suggest that there is no such thing as an 'exacerbator phenotype' in COPD. These observational cohort studies suggest that some patients move in and out of an exacerbating behaviour pattern over time. This means you can't really pin down a plan for subsets of the population and reliably expect them to continue to behave in the way they previously have.

My pragmatic non-evidence-based common sense approach over the past few years has been: if you have a patient who feels fevered with mucopurulent sputum and deteriorating dyspnoea, start with an antibitotic for the first 48 hours (as well as maximal bronchodilation) and add systemic steroids if the patient isn't responding as quickly as might have been expected. Conversely, a patient who is less systemically unwell but is wheezy might benefit from an earlier introduction of systemic steroid. We don't always have to use both in conjunction in every case.

The patient's blood eosinophil count is unlikely to hold sway against other clinical variables and, as such, the role for their measurement is at present, in my opinion, limited.

Dr Vince Mak, *Consultant Integrated Care Physician, London*

I think that there are a lot of data out there that suggest that there is a subset of COPD patients who are not obviously asthmatic who do have raised blood and/or sputum eosinophilia during exacerbations, and there is some evidence to show that these patients do seem to respond better to oral corticosteroids in terms of speed of recovery and protection from future exacerbations and hospital readmissions. Professor Dave Singh recently published a review in the *European Respiratory Journal* (http://erj.ersjournals.com/content/early/2014/10/16/09031936.00162414)

I also asked Professor Morice at the PCRS UK Conference referred to in the question what effect inhaled corticosteroid has on blood eosinophils and he said that they were reduced. This gives us a problem, as looking for eosinophilia in those already on triple therapy is not very helpful.

At present I think that the pragmatic approach is much as Iain says: if there is infection then, despite the poor overall evidence base for their use, treat with antibiotics. Of course, reliably identifying bacterial infection in a timely manner is challenging in clinical practice. If the patient doesn't get better or if wheeze and shortness of breath are troublesome despite maximal bronchodilators, use oral corticosteroids.

As a clinical team we do not proactively measure eosinophilia in every patient, but we do look for blood or sputum eosinophils in those who have recurrent exacerbations.

I court a degree of controversy by being someone who still uses long-term low-dose oral corticosteroids in patients who are frequent exacerbators, as this seems to be clinically effective in a small subgroup. The justification for this approach is that it is better for them to have a low dose (say 10 mg per day of prednisolone) long term than frequent high-dose courses which are far more damaging to bones and increase problems in those with established diabetes mellitus.

With more and more patients popping oral corticosteroids from rescue packs they have at home, by the time we see them sputum and blood eosinophilia will have disappeared as eosinophils are very sensitive to corticosteroids and their levels change within hours of introducing them. Thus, the practicality of using them as a marker to drive consistent decision-making, as suggested in the original question, is fraught with difficulties and potentially misleading anomalies.

So, pragmatically, I agree with Iain, but I do think that eosinophils play a role in determining those patients more likely to benefit from corticosteroids.

Have you got a question for Second Opinion?
If you have a question for Second Opinion please submit your question to info@pcrs-uk.org quoting "Second Opinion" in the subject line

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2018 Workshop events

Project planning and implementation in a cash-strapped NHS
8-9 June, Hilton Sheffield

Utilising Patient's feedback for service evaluation: patient-centred outcomes based care
9-10 November, University of Birmingham

https://pcrs-uk.org/clinical-leadership-programme

PRIMARY CARE RESPIRATORY SOCIETY UK
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Primary Care Respiratory Society UK wishes to acknowledge the support of Napp Pharmaceuticals Ltd and Pfizer Ltd in the provision of an educational grant towards this programme. Sponsors have no input into the content of this programme.

Delivering Excellence Locally

Featuring initiatives led by PCRS-UK members around the UK, supported by PCRS-UK programmes and tools

Thinking differently about delivering pulmonary rehabilitation improved patients' access to education



Fran Robinson talks to **Karen Donaldson** and **Ali Brenton** from South Lakes Community Respiratory Service

Two community respiratory therapists have improved and extended patients' access to respiratory education by taking a fresh look at the way pulmonary rehabilitation (PR) is delivered.

Karen Donaldson, Clinical Lead and Specialist Respiratory Physiotherapist, and Ali Brenton, Specialist Respiratory Occupational Therapist, of the South Lakes Community Respiratory Service in Cumbria, felt that their traditional PR format of offering respiratory disease education in combination with exercise did not meet all patients' needs.

They challenged the idea that patients need and want information and exercise at the same time. An analysis identified that:

- The 'one size fits all' model did not work for those patients who:
    - needed disease education at a different time in their illness rather than when a space was available on a programme
    - were not suitable for exercise
- The education topics, mainly focused on COPD, were not suitable for patients with interstitial lung disease (ILD) and bronchiectasis
- Patients found the 2.5-hour combined exercise and education sessions exhausting
- The small under-resourced respiratory team was struggling to deliver the service

So Karen and Ali decided to separate the education lectures from the exercise classes. They created six new 'lung talks' to be delivered in workshops. Three talks were disease-specific, focusing on COPD, bronchiectasis and ILD, and three were designed to educate patients about symptom management and lifestyle issues. The new workshops were advertised in GP surgeries and patients were able to refer themselves, even if not previously known to the team. They were given the option to choose which and how many talks to attend. No additional resources, time or costs were used to pilot the new model, and a cost saving was also made on the room hire as a result of the shorter exercise sessions.

Feedback on the new service revealed:

- The quality of the 'lung talks' was highly rated by a majority of patients
- Access to education was improved: 77 more patients (a 115% increase) accessed the education workshops compared with the same period the previous year
- A total of 144 patients attended one or more of the new workshops, with 37% attending one talk, 26% attending two talks, 20% attending three talks and 17% attending four or more talks
- Nearly two-thirds of patients (63%) attended the lung talks whilst waiting for the exercise component of the PR programme, therefore accessing relevant information about their condition and self-management of symptoms sooner

The 2.5-hour traditional PR sessions had been very labour-intensive for the small team, which has to cover a large rural area. Previously only Karen and Ali had been trained to deliver the sessions. Now other members of staff have been trained to use the PowerPoint presentations and can deliver the education talks.

Karen says they are really pleased with the feedback from patients: "The patients who are coming to the 'lung talks' are really hungry for information, want to learn how to keep themselves well and self-manage and tell us they are learning a lot – many are even changing their mind about enrolling on the exercise component once they hear of the benefits of exercise within the context of their disease."

"Although patients generally receive good care from their GPs and practice nurses, they tell us their appointment times just aren't long

enough to ask all the questions about self-management, and have found the 'lung talks' to be a real benefit to their existing self-management plans."

Next steps

The team are working on producing some short videos on self-help techniques for patients to watch at home on topics including: controlling breathing, managing breathlessness and coping with low energy. A video on inhaler technique has already been produced and, in addition to promoting the British Lung Foundation resources, Karen and Ali are developing some online handouts which patients can download and print themselves at home.

Learning Points

Karen and Ali learned from this project that:

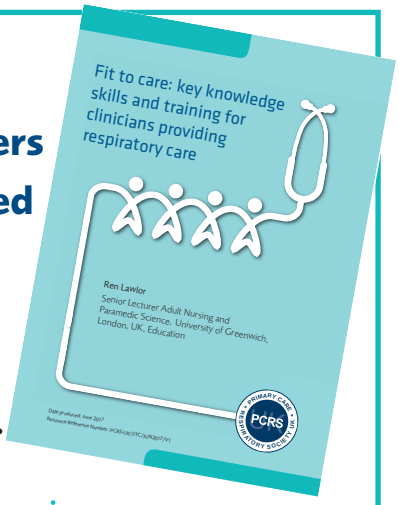
- The 'one size fits all' PR model of combining education and exercise, whilst effective, does not meet the needs of all respiratory patients
- Offering patients the opportunity to opt in to receiving information about respiratory education encourages more patients to access education
- Disease and self-management information should be tailored to patient needs
- There is always room to make improvements – service improvement should be embraced as it not only improves patient care but it energises and inspires staff, especially at times of resource and staffing pressure
- It is important to listen to patients because they have great ideas about how their care can be improved

Karen and Ali are interested to hear from any services who have attempted something similar or from anyone who is working on a similar online patient education resource.

They can be contacted by email: Karen.Donaldson@cumbria.nhs.uk Alison.Brenton@cumbria.nhs.uk

Affiliated Groups

Calling all affiliated groups and their members – get your group involved … 'Fit to Care' Survey



In 2017 PCRS-UK launched the 'Fit to Care' publication (https://pcrs-uk.org/fit-care).

This important document provides concise information to help:

- Guide healthcare professionals to facilitate and deliver high quality respiratory care in line with national evidence-based guidance
- Aid healthcare professionals to assess their own competence to deliver such care, and identify and seek appropriate training and ongoing professional development supported by their employers
- Support all healthcare professionals to be accountable and trained to provide such care to a given standard, thereby reducing variation in care and ensuring patients can expect to receive high quality evidence-based respiratory care irrespective of who is delivering such care or where in the community that care is being provided
- Provide a reference for service managers to ensure the provision of appropriate educational support programmes for employed healthcare professionals

The document sets out the key skills knowledge and training required for those healthcare professionals working at three clearly defined levels of practice (standard, advanced and expert).

PCRS-UK is keen to assess if healthcare professionals have the recommended skills, knowledge and training for the level at which they are currently working and to explore possible barriers to accessing further training. We are therefore asking all groups and their members to reflect on their own competencies based on the standard of practice at which they are currently working and complete the simple, quick survey at https://pcrs-uk.org/form/fit-care.

Once all surveys are returned, a collated report will be produced highlighting the level of practice, knowledge and education relevant to the level of practice and the barriers faced in accessing further training.

Thinking of setting up a local group? Benefits of PCRS-UK Affiliated Groups

Working in primary care can, at times, feel quite lonely and isolating. With the ever-present pressures of today's NHS, there just aren't enough hours in the day to keep up to date or just take time to enjoy our jobs.

That's where PCRS-UK affiliated local groups come in. They offer a lifeline for nurses and other healthcare professionals enabling them to stay in touch, network with colleagues, learn about clinical issues, share best practice and, moreover, offer a welcome chance for some fun and camaraderie. See **https://pcrs-uk.org/affiliated-groups** to see if there is an affiliated group near you.

PCRS-UK can offer support to get you started. We can introduce you to members who are already running successful groups so that they can help mentor you through the initial stages, and we also provide a resource pack to help you get started (see **https://www.pcrs-uk.org/resource-pack-help-you-get-started**). See **https://pcrs-uk.org/local-groups-getting-inspired** for more information.

Continued on page 54

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Affiliating your group to PCRS-UK confers free PCRS-UK membership for the group leader and the opportunity to attend group leader workshops. We can:

- Promote your events/ meetings by sending emails to members in your area and adding your meetings to our events listing on our website
- List your group on our website and promote it to our members
- Point you in the direction of tools and resources that you can use as a basis for discussion and local update
- Send you a regular newsletter especially for group leaders offering tips and advice for managing your group and sharing information

To affiliate your group, visit **https://www.pcrs-uk.org/affiliation-pcrs-uk**

Be Seen, Be Heard, Be Brave

11 July 2018,
Radisson Blu Hotel, Birmingham

It has long been recognised that many healthcare professionals, whilst confident in their ability to care for patients, sometimes lack confidence in the workplace to challenge decisions, take forward ideas they may have had, or seek support for their own further development and training.

This workshop is a great opportunity to learn about:-

- Yourself: how you communicate with others and work in a team
- Confidence and how to train yourself to be more confident
- Top tips for having brave conversations and dealing with difficult people/situations
- Gaining confidence to be the patient advocate – challenging diagnoses, challenging treatment, management and services

This is an ideal event for those who are leaders/ deputies of an affiliated group or those who are considering setting up an affiliated group to come and take the first steps in learning more about yourself and how you can become more confident.

To find out more visit
https://pcrs-uk.org/ag-leaders-events

Primary Care Respiratory Society

Evaluation of appropriateness of inhaled corticosteroid (ICS) therapy in COPD and guidance on ICS withdrawal

This guide provides an algorithm to identify people with chronic obstructive pulmonary disease (COPD) who might benefit from ICS treatment and those in whom it may not be appropriate, and an approach to withdrawing ICS in patients in whom it is not needed.

- In symptomatic patients with COPD at low risk of exacerbation, bronchodilation should be the first-line treatment. [GOLD 2017]. In symptomatic patients on monotherapy, treatment can be stepped up to a combination long-acting β2-agonist plus long acting muscarinic antagonist (LABA+ LAMA), and for patients with severe breathlessness (CAT score 10 or MRC grade 2) initial therapy with LABA+LAMA may be considered [GOLD 2017].
- In patients with symptoms (CAT score <10 or MRC grade <2) at high risk of an exacerbation,

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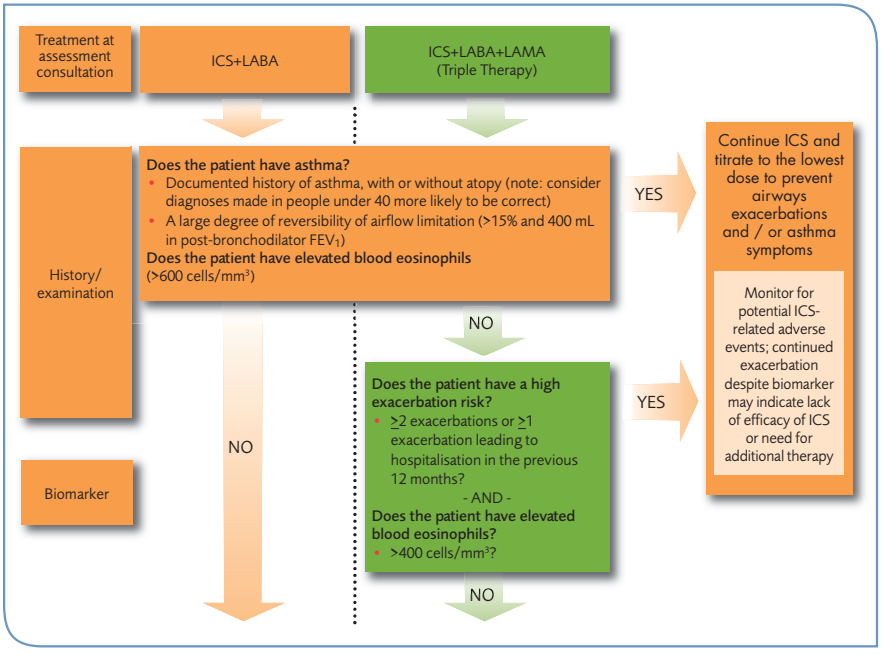
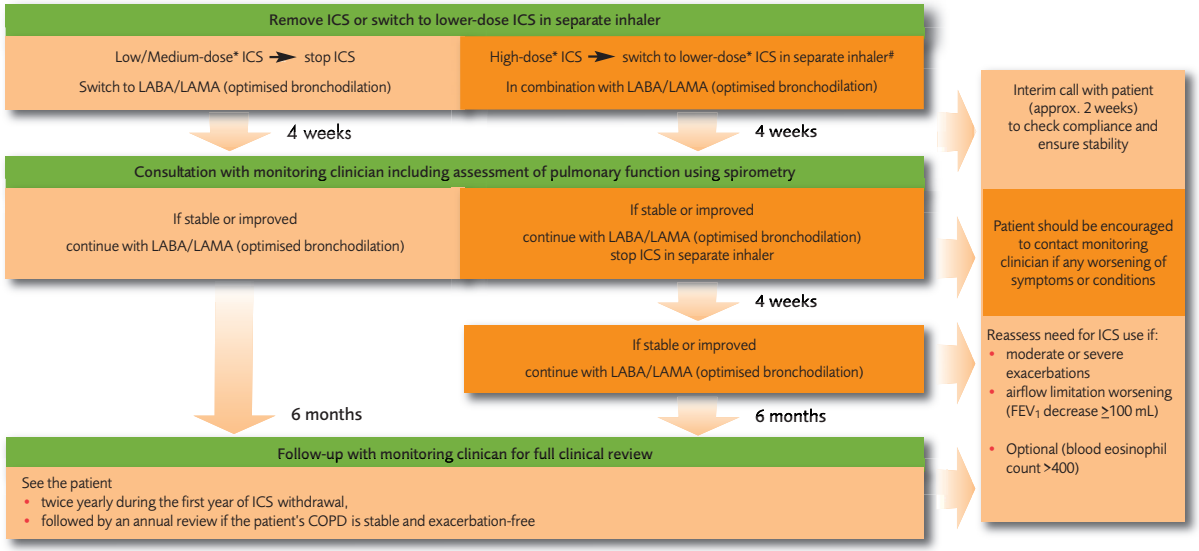


For people with COPD who don't need ICS



* See next figure # ICS that is not in a combination inhaler is not licensed for treatment of COPD

Note: Whilst the use of LAMA and LAMA+LABA combinations are recommended as options by GOLD for patients at risk of exacerbation, the licensed indications are as maintenance bronchodilator treatments to relieve symptoms in adult patients with COPD.

SEE goo.gl/fw5o6C FOR MORE INFORMATION ON EOSINOPHILS

Primary Care Respiratory Society

Continued from previous page

the recommended first-line treatment is a LAMA (stepping up to LABA+LAMA if necessary) or a LABA+LAMA. In more symptomatic high risk patients, combination LABA+ LAMA is the preferred first-line treatment, with LAMA or ICS+ LABA given as alternative options [GOLD 2017]. If exacerbations persist on LABA+ LAMA, patients can be stepped up to LABA+ LAMA+ICS (triple therapy).

- Long-term ICS use is associated with a significant risk of pneumonia [Yawn 2013; Suissa 2013; Kew & Seniukovich 2014], and systemic effects [Price 2012]; therefore ICS-containing regimens are not recommended in low-risk patients, and should only be considered for high-risk patients with features of asthma, or as triple therapy if exacerbations persist despite treatment with a LABA+LAMA [GOLD 2017].
- Discontinuing ICS rapidly decreases the risk of serious pneumonia [Suissa 2015].
- Despite years of guidance on the limited role of ICS in COPD [GOLD 2001], there is evidence of inappropriate use of ICS in COPD patients who are at low risk of exacerbation [Vestbo 2014; Price 2014].
- Recent studies have indicated that ICS can be withdrawn in both low- and high-risk patients, provided adequate bronchodilator therapy is in place [Rossi 2014a; Rossi 2014b; Magnussen 2014]. Withdrawal of ICS only increased exacerbation rates in patients with both raised eosinophils and a history of frequent exacerbations [Calverley 2016].

ICS dose switch guidance

Commonly prescribed ICS treatments for COPD and recommended ICS in separate inhaler for change in treatment

Current treatment	Switch to
• Fluticasone/salmeterol - 250/50µg 1 puff twice daily	• LABA/LAMA
• Beclomethasone/formoterol - 100/6µg 2 puffs twice daily	• LABA/LAMA
• Fluticasone/vilanterol - 92/22µg 1 puff once daily	• LABA/LAMA
• Budesonide/formoterol - 400/12µg 1 puff twice daily - 200/6µg 2 puffs twice daily	• LABA/LAMA
• Budesonide/formoterol - 400/12µg 2 puffs twice daily	• LABA/LAMA plus - budesonide 200µg 2 puffs twice daily
• Fluticasone/salmeterol - 500/50µg 1 puff twice daily	• LABA/LAMA plus - fluticasone 250µg 1 puff twice daily

The following fixed ICS/LABA combination brands are licensed in COPD: Seretide Accuhaler, AirFluSal Forspiro, Relvar Ellipta, Symbicort, DuoResp Spiromax, FostairMDI and Foster NEXThaler, Fobumix Easyhaler

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Adapted, with permission from the International Primary Care Respiratory Group (IPCRG). January 2018. The PCRS-UK wish to acknowledge and thank IPCRG for allowing PCRS-UK to adapt this material specifically for UK use based on current national guidance. This resource is advisory; it is intended for general use and should not be regarded as applicable to a specific case. This resource has been adapted by Dr Noel Baxter, Dr Kevin Gruffydd-Jones, Dr Vince Mak and Dr Iain Small. The online version of this document can be downloaded from https://pcrs-uk.org/stepping-down-ics-copd

The original IPCRG version of the desktop helper was written by Dr Alan G Kaplan, Dr Miguel Román Rodríguez, Professor David B Price and Dr Ioanna Tsiligianni and can be obtained from https://goo.gl/AB713K

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- Clinical care
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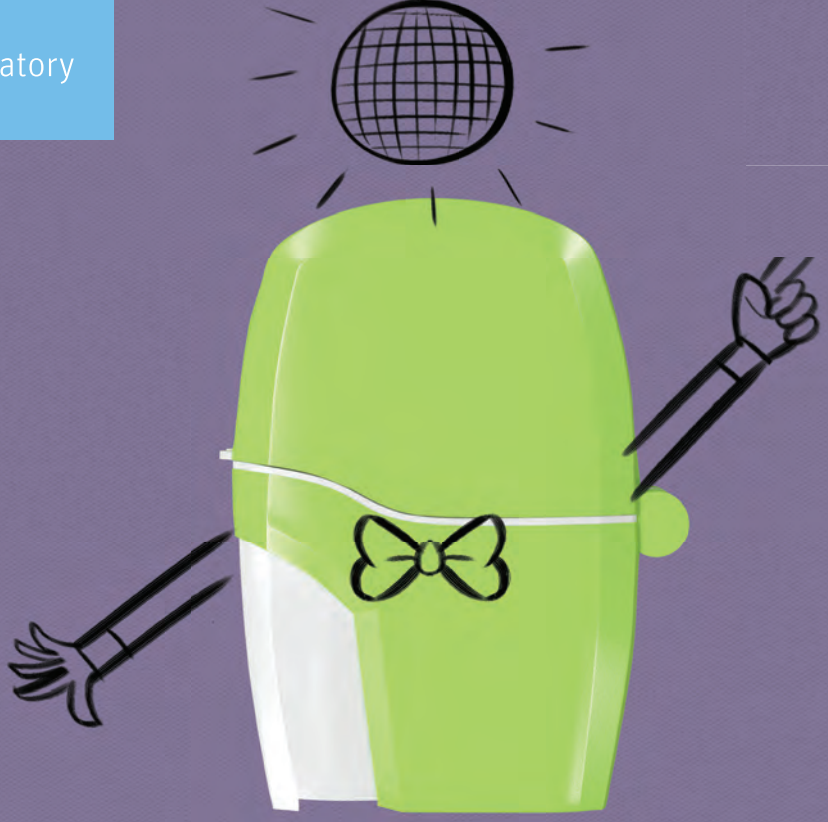

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Prescribing information

Please refer to the Summary of Product Characteristics (SmPC) for full details of Prescribing Information.
Braltus® (tiotropium bromide) Inhalation Powder Abbreviated Prescribing Information **Presentation:** Delivered dose: 10 mcg of tiotropium per capsule. Each capsule contains 16 mcg of tiotropium bromide, equivalent to 13 mcg of tiotropium. **Indications:** Maintenance bronchodilator treatment to relieve symptoms in adult patients with chronic obstructive pulmonary disease (COPD). **Dosage and administration:** Inhalation use 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 Zonda® inhaler. 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: Use only if expected benefit outweighs the potential risk. *Hepatic Impairment:* No special requirements. **Contraindications:** Hypersensitivity to the active ingredient or any excipients. **Precautions and warnings:** Not to be used for the initial treatment of acute episodes of bronchospasm, i.e. rescue therapy. Immediate hypersensitivity reactions may occur. As with other inhalation therapy, paradoxical bronchospasm may occur and treatment should be immediately discontinued. Use with caution in patients with narrow-angle glaucoma, prostatic hyperplasia or bladder-neck obstruction; 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. The excipient lactose may contain trace amounts of milk proteins which may cause allergic reactions in patients with severe hypersensitivity or allergy to milk protein. **Interactions:** No formal drug interaction studies have been performed. Co-administration with other anticholinergic drugs not recommended. **Pregnancy and lactation:** Not recommended. **Effects on ability to drive and use machines:** No studies on the effects on the ability to drive and use machines have been performed. The occurrence of dizziness, blurred vision, or headache may influence the ability to drive and use machinery. **Adverse reactions:** *Serious:* Hypersensitivity reactions, anaphylactic reaction, bronchospasm, anticholinergic effects (glaucoma, constipation, intestinal obstruction including ileus paralytic as well as urinary retention), atrial fibrillation, supraventricular tachycardia, tachycardia. *Common:* Dry mouth. Consult the Summary of Product Characteristics in relation to other side effects. **Overdose:** May lead to anticholinergic signs and symptoms. **Price:** £25.80 **Legal category:** POM. **Marketing Authorisation Number:** PL 00289/1870 **Marketing Authorisation Holder:** Teva UK Limited, Brampton Road, Hampden Park, Eastbourne, BN22 9AG, United Kingdom. **Job Code:** UK/MED/16/0088 **Date of Preparation:** July 2016

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Teva UK Limited on 0207 540 7117 or medinfo@tevauk.com

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Date of preparation: July 2017 Approval code: UK/BRA/16/0025b(1)

If you have any questions or wish to request further information, please contact us as follows: email at medinfo@tevauk.com or by post at Teva UK Limited, Ridings Point, Whistler Drive, Castleford, WF10 5HX.