Volume 2
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September/October 2015

Primary Care Respiratory **UPDATE**




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HIGHLIGHTS ...

The importance of diagnosis

Fractional Exhaled Nitric Oxide Testing

Pull out wall chart: Spirometry

Nurses: Are you ready for revalidation?

Journal Round Up

Policy Round Up

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References: 1. Jones PW, Singh D, Bateman ED, *et al.* Efficacy and safety of twice-daily aclidinium bromide in COPD patients: the ATTAIN study. Eur Respir J. 2012; 40(4):830-6. 2. Kerwin EM, D'Urzo AD, Gelb AF, *et al.* Efficacy and safety of a 12-week treatment with twice-daily aclidinium bromide in COPD patients (ACCORD COPD I). COPD. 2012;9(2):90-101. 3. Eklira Genuair Summary of Product Characteristics. Barcelona, Spain: Almirall, S.A.

GI/ACL/1114/0056 Date of preparation: April 2015. Date of expiration: January 2016.

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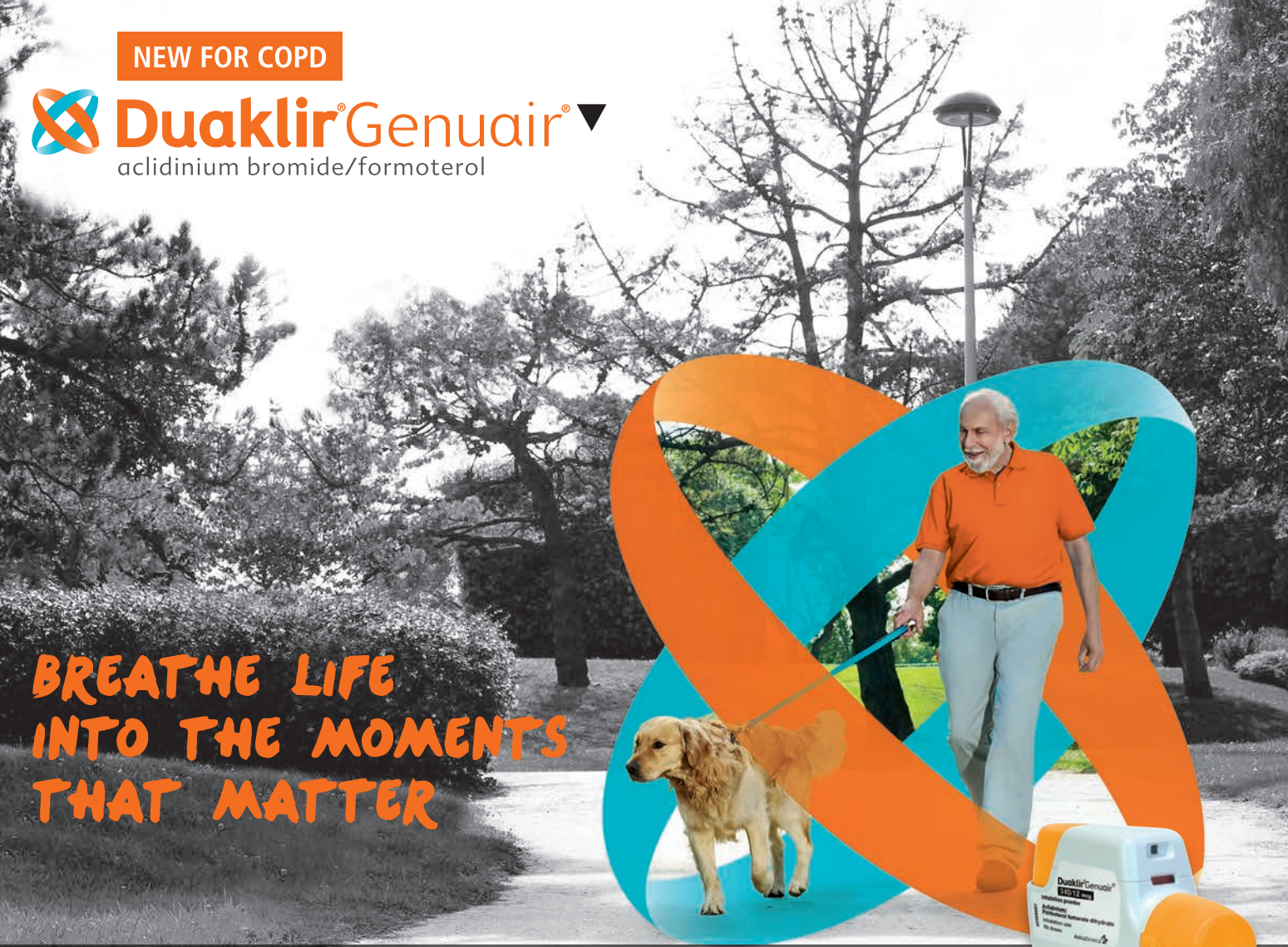

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Legal Category: POM

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References: 1. Duaklir® Genuair Summary of Product Characteristics. Södertälje, Sweden: Aztrazeneca AB. Revision date April 2015. **2.** Singh D, Jones P, Bateman E, *et al.* Efficacy and safety of aclidinium bromide/formoterol fumarate fixed-dose combinations compared with individual components and placebo in patients with COPD (ACLIFORM-COPD): a multicentre, randomised study. BMC Pulm Med. 2014;14:178. **3.** Singh D, Chapman KR, Make BJ, *et al.* LAC30-31: Effect of aclidinium bromide/formoterol fumarate fixed-dose combination (FDC) on night-time and early morning symptoms in COPD. Eur Respir J. 2014;44(Suppl 58):A2415.

▼ This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information.

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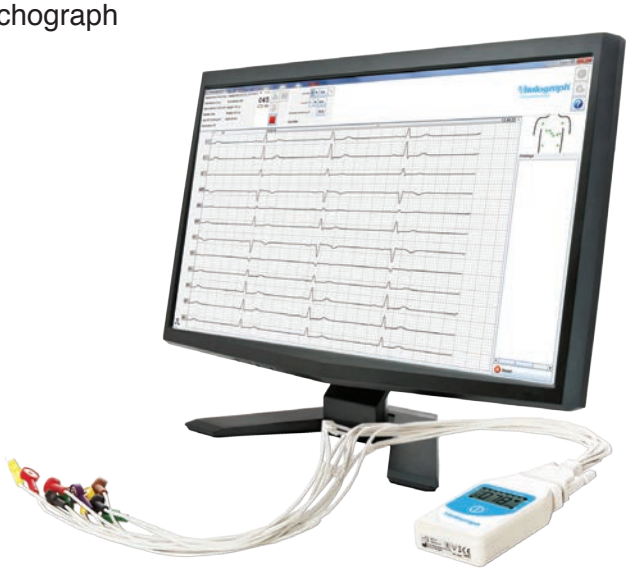

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Editor's Round-up

Hilary Pinnock, *Editor*

The theme of the September issue of the *Primary Care Respiratory Update* is diagnosis.

We were reminded of the importance of an accurate diagnosis in asthma by the release earlier in the year of the draft guideline from NICE on the diagnosis and monitoring of asthma, and challenged to consider whether our current approach is fit for purpose. It has sparked a debate that we cannot ignore and several of the articles in the *PCRU* pick up the theme. Stephen Gaduzo in his Chair's perspective outlines some of the concerns raised by PCRS-UK members, whilst Carol Stoneham in a practical 'Back to Basics' article shares her very positive experience of actually using Fractional Exhaled Nitric Oxide (FeNO). Whilst discussions continue, our best response as clinicians may be to reflect on the approach we adopt when we suspect that a patients' symptoms are due to asthma, and perhaps checking some of the practical PCRS-UK advice on spirometry highlighted in the centre-fold.

Diagnosis, of course, is central to our role in primary care where we daily see people presenting with undifferentiated symptoms and often very early in the course of a disease process before the classical symptoms and signs have developed. Distinguishing the common self-limiting causes for a symptom from the rare but serious conditions is what we do – though it is not always an easy task I attended a roundtable discussion on Interstitial lung disease recently and a colleague from a specialist clinic who saw several new patients a week with the diagnosis was taken aback when I calculated on published prevalence rates that a full time GP can expect to diagnose one new case every 7 years. The paper from the *npj Primary Care Respiratory Medicine* on raising the index of suspicion in primary care is a useful reminder of when we should suspect this group of rare but important conditions.

The imminent launch of revalidation will be high on the agenda of the 420 nurse members of PCRS-UK. A working party of PCRS-UK nurses have developed some practical support with a range of respiratory resources that will prove to colleagues as they prepare reflective portfolios.

As always the *npj Primary Care Respiratory Medicine* is a rich source of interesting and relevant evidence. Side effects of inhaled steroids, helping people with severe COPD, and dealing with the stress induced by incidental finding of pulmonary nodules are just three of the topics addressed in recent papers in our journal. These papers are free to access: do check them out on the *npj Primary Care Respiratory Medicine* website and share them with your colleagues.

Chair's perspective: The critical importance of diagnosis. Why we must get it right.

Stephen Gaduzo, *PCRS-UK Executive Chair*

A draft NICE guideline on the diagnosis and monitoring of asthma[1], published for consultation earlier this year, has sparked a robust debate about the most effective way of making an accurate asthma diagnosis.

It is welcome news that NICE is focusing on this vital area of care because PCRS-UK agrees that there is a need to improve asthma diagnosis. The clearer and more objective a diagnosis, the greater likelihood that it will take the clinician down the right treatment pathway, ensure treatment is as structured as possible and that patients will be given the right information and care. It is also an important factor in reducing variations in the quality of care that we know exist across the UK.

Recent reports have highlighted the need for improvements in asthma care. Significant shortfalls in care resulting in unnecessary deaths were revealed by data collated by The National Review of Asthma Deaths (NRAD).[2] More recently, a report from Asthma UK, called Patient Safety Failures in Asthma Care,[3] revealed that one year on from NRAD there are still issues with safe prescribing in asthma. Getting the diagnosis of asthma right would go a long way to tackling these serious deficiencies and variations in care. In the guideline consultation document NICE cited studies showing that almost a third (30%) of people being treated for asthma no longer show signs of the condition, as a major reason for improving diagnosis.

NICE reinforce the advice that to achieve an accurate diagnosis objective clinical tests should be used as well as taking a full history, including signs and symptoms. In a departure from the existing BTS/SIGN guidance on the management of asthma[4] it put spirometry and FeNO (fractional exhaled nitric oxide) measurements at the centre of asthma diagnosis. Although the BTS/SIGN guidelines with which we are all familiar, describe and recommend FeNO testing and spirometry as part of the assessment in some patients, NICE proposed a more prominent place for these tests, and placed less emphasis on taking a full history, performing an examination and undertaking trials of treatment.

As a result, the algorithms it recommended set out an approach to diagnosing asthma that represents a huge shift from current practice, sparking a significant diversity of view among well respected clinicians both for and against the new direction of travel that NICE was recommending.

PCRS-UK has been a key player in this debate, drawing together the views of our members to ensure that we put forward a balanced view. Many PCRS-UK members are worried about the practical difficulties of implementing the new guidance. We presented NICE with the findings of a survey of almost 100 PCRS-UK members who said that what was proposed is neither realistic nor feasible in primary care. Almost eight in ten respondents said the proposed guidance would be "difficult" or "very difficult" to implement. Genuine doubt was also expressed that the guideline would actually improve asthma care in practice.

A key concern that PCRS-UK expressed to NICE was that these new algorithms underplay the importance of the well-established and holistic practice of taking a clinical history, examination, peak flow measurements and trials of treatment. We were not confident about the quality of evidence that lies behind NICE's new algorithms, and recommended to them that this new approach to the diagnosis of asthma should be piloted before being promoted for universal adoption. One particular problem is that FeNO measurements are reduced in people who smoke which may provide false reassurance in smokers.

NICE's enthusiasm for widespread FeNO testing is not currently reflected either in primary or secondary care. Few hospitals, including my own local

clinic in Stockport, offer it, suggesting that there is no widespread consensus yet as to its value.

However we know of some clinicians, such as Carol Stonham, a nurse practitioner and PCRS-UK's nurse lead, who have adopted FeNO testing in general practice and are very positive about it. In our article Back to Basics FeNO testing (see page 17) Carol explains why she finds the test a useful addition to the diagnostic process. There are also experts like Mike Thomas, Professor of Primary Care Research at the University of Southampton, who has conducted research into the use of FeNO testing and is a strong advocate for its place in general practice.

There are outstanding questions about the practical implementation of FeNO testing. Who will pay the capital cost of acquiring the new FeNO machines and the not insignificant on-going cost of consumables? Will practices be reimbursed for the longer appointments required to do the tests? If practices are unable or unwilling to make the investments required to provide the service, will they have to refer their patients to diagnostic hubs or secondary care to make a diagnosis of asthma? Have all the associated costs of such a dramatic change in practice been factored in to NICE's plan?

So what about the place of spirometry? The draft NICE guideline proposed that diagnosis is confirmed by spirometry in all patients, including children from the age of 5. While we agree with NICE that spirometry does have a valid role, particularly where there is diagnostic uncertainty, some of the pitfalls need to be recognised. For example: even when asthma is present, spirometry (and FeNO) may be normal. Accurate spirometry in young children, as recommended by the draft NICE guidance, is difficult to achieve in both primary and secondary care. Pressure on spirometry services would be sure to rise dramatically if the suggested new guidance is implemented.

The quality of spirometry in primary (and indeed secondary) care can be very variable. Many practices have spirometers, however the healthcare professionals performing the tests and interpreting the results are not always adequately trained or fully competent in doing so. The quality of spirometry has to be the priority to address.

PCRS-UK has long argued for standards of spirometry to be improved and for practitioners to be accredited. Previous chairs, our research and policy leads and I, as well as representatives of other relevant organisations, have been involved in, sometimes quite heated, negotiations with NHS England to draw up guidance on quality assured spirometry. All the experts eventually reached agreement on the approach to training and accreditation that would be desirable for performing and interpreting spirometry. That was over a year ago and we are still waiting for these much needed standards to be published. We shall be using the more widespread use of spirometry proposed by NICE as ammunition to press NHS England to publish the spirometry guidance as a matter of urgency.

A final concern we have is that the proposed NICE guidance would present primary care with conflicting guidelines. We are urging NICE to collaborate with BTS/SIGN to ensure primary care has consistent, clear, guidance. If we end up with rival guidelines this will simply confuse clinicians. The danger is they may ignore the guidance altogether because it will seem to be too complex or difficult to follow which can only jeopardise efficient care for patients.

We have expressed all these concerns to NICE during the consultation phase of the draft guideline. We met Professor Mark Baker, director of clinical practice at NICE, and had a full and frank exchange of views with him. For me, the heart of this debate is about the need for primary care to find the most effective way of making an accurate diagnosis of asthma. The draft guidance proposed by NICE may be the right way to go in the longer term, but many of us feel that what they were proposing is too big a step at this stage. In short, PCRS-UK has forcibly argued that we need to put the brakes on and think carefully about how any such new approaches could be implemented.

NICE has announced that the final guideline will be delayed in order to allow additional time to work with commissioners and healthcare professionals in asthma care to make sure the recommendations can be introduced effectively and efficiently - suggesting that NICE has heard the concerns expressed by PCRS-UK and others.

In the meantime, the new approach to the diagnosis of asthma, proposed by NICE, has raised an important debate and I would urge you all to review your processes for the diagnosis and monitoring of asthma to ensure you do not have patients continuing to receive medication when they do not need it, or indeed patients who have their asthma diagnosis overlooked.

PCRS-UK has a wealth of online, evidence based resources, written by experts that can guide you in providing the highest standard of respiratory care for your patients. For example, we have recently updated our Quick Guide to Asthma, which takes into account the thinking that was proposed in the NICE draft guidance as well as the established approach advocated in the BTS SIGN guideline. Why not refresh your diagnostic skills by downloading our Diagnosis of Asthma in Adults and Diagnosis of Asthma in Children opinion sheets or take a look at our practice improvement tools.

PCRS-UK will continue to represent your views, as grassroots clinicians, in this debate and will continue to keep you up to date through e-alerts and social media when any new announcements are made about the eventual publication of the new guidance.

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3. Patient safety failures in asthma care: the scale of unsafe prescribing in the UK. Asthma UK 2015. https://www.asthma.org.uk/patient-safety
4. BTS/SIGN Asthma guideline 2014 https://www.brit-thoracic.org.uk/guidelines-and-quality-standards/asthma-guideline/

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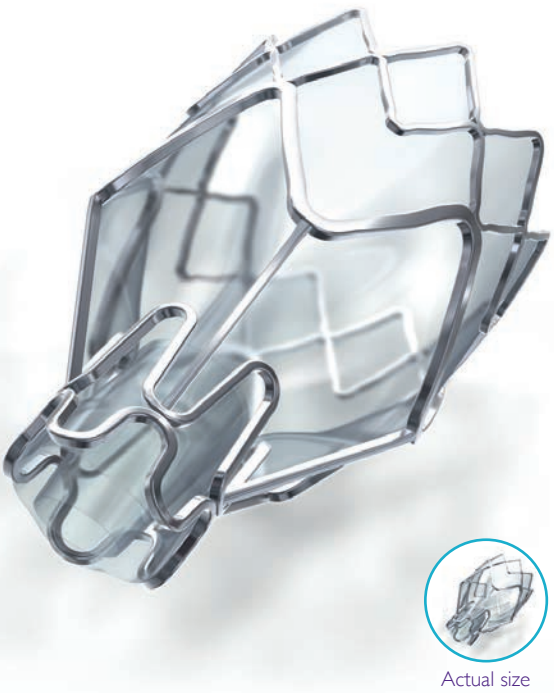

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Revalidation

Nurses: Are you ready for revalidation? PCRS-UK is here to help

Francesca Robinson, *PCRS-UK Communications Consultant*, outlines new PCRS-UK materials to support nurse revalidation developed by PCRS-UK working party of nurses **Sally Harris, Ren Lawlor, Debbie Roots, Carol Stonham, Steph Wolfe** and **Tricia Bryant**

The Nursing and Midwifery Council (NMC) is shortly expected to give the go-ahead to revalidation for nurses and PCRS-UK is here to help you prepare with a wealth of resources that can be used to ensure you are providing a high standard of patient-centred respiratory care.

A report on the findings of the 19 sites that have been piloting the process will be published this month. The NMC Council will be making a final decision about proceeding with revalidation in October, with the first nurses and midwives expected to go through the process in April 2016.

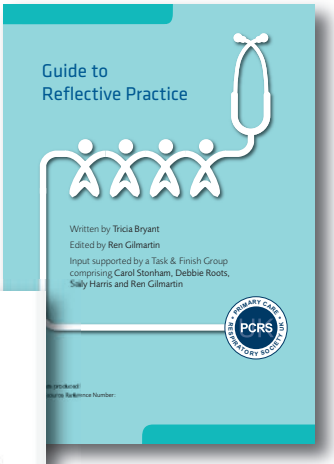
More than 2,100 participants from a range of health and social care settings took part in the pilots earlier this year and many felt that revalidation was a positive experience. Early indicators suggest that nurses and midwives found revalidation straightforward and that reflection against the Code provided an opportunity for individuals to think about their professional behaviour.

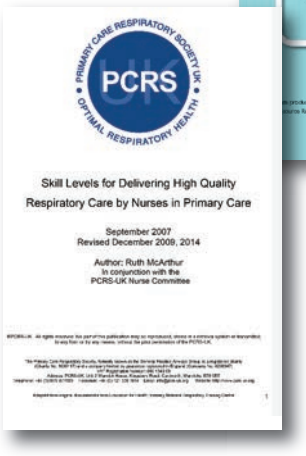
PCRS-UK is launching some new tools at the PCRS-UK conference in October that are designed to help primary care nurses understand how to undertake reflective practice and ensure their respiratory knowledge and skills are up to date.

These are two of the essential requirements of revalidation, which requires all nurses to demonstrate that they can practise safely in order to stay on the NMC register.

Nurses should already be starting to think about the revalidation requirements, which are more onerous than the previous PREP system under which nurses were only held to account if they were subject to a NMC spot check.

The new PCRS-UK tools – a Guide to Reflective Practice, a self-rating respiratory skills checklist and an updated skills evaluation document – will support nurses to reflect, in a structured way, what their current knowledge base is in relation to respiratory disease management. They are designed to help nurses to identify learning gaps and explore the minimum standards required for the respiratory work they do.





These tools can be used to prepare for revalidation using respiratory disease as a model. This could then be translated across other disease areas.

Reflective practice in respiratory care - a new guide for nurses

The new PCRS-UK Guide to Reflective Practice aims to demystify the formal process of reflection, with which many nurses are unfamiliar. This is a process nurses are required to undertake under the recently revised NMC Code of Practice[1], which now governs all areas of respiratory and other practice.

As part of the revalidation requirements, nurses will need to collate and provide a minimum of five reflective accounts of how feedback they have received has improved or affirmed their practice and have discussed these as part of their confirmation ("third party" checking).

The new PCRS-UK Guide explains that reflection on respiratory care is a way of considering and examining your own thoughts, actions and reactions, and sometimes those of others, to a given situation or event in order to gain a better understanding of yourself and to identify more effective ways of responding in future. The process can allow you to improve your critical thinking, change your approaches to patient care, promote self-awareness and improve your communication skills.

However, to reflect effectively one must be prepared to uncover one's own perceptions and to be objective about how these perceptions and subsequent judgements may have affected one's chosen actions.

Many nurses find this level of personal insight unnerving but the Guide says that reflection should be looked at in a positive way, as a process by which we can learn about ourselves, our colleagues and our environments in such a way that the result is an improvement in future care.

The PCRS-UK Guide explains in practical ways how nurses can reflect on their respiratory practice through: keeping an on-going personal record; reflecting on an area of practice; reflecting on the patient experience, reflecting on the clinic environment, reflecting on peer feedback and on learning and sharing knowledge with the team. It suggests that nurses can use PCRS-UK practice worksheets on respiratory disease to reflect on their respiratory practice.

The Guide sets out as an example how the practice improvement worksheet 'Post-acute care bundle in COPD'[2] could be used to reflect on a specific area of practice. It recommends reading through and reviewing the resources provided as links in the worksheet then seeking the support of the practice team to identify a patient attending for an unscheduled COPD visit. The nurse could then arrange to review the patient within 48 hours of being seen and assess the patient as described in the worksheet.

It sets out the type of questions a nurse needs to ask in order to complete the reflective process.

These are:

- How did you feel/what were your thoughts about providing a care bundle for the patient?
- Did you learn anything new from the worksheet or its associated resources?
- What did you discover when you reviewed the patient?
- Were the outcomes of the consultation as you would expect or did you discover anything new about your own knowledge, the process for reviewing people with COPD, any organisation of care issues or anything new about the patient's own knowledge and management of their condition?
- What have you learned by implementing this care bundle?
- How will what you have learned influence your practice in future?

This tool and reflective process could also be used across other areas of their practice areas.

Are your respiratory skills up to date?

In order to meet the requirements of revalidation nurses will need to prove that their skills are up to date. This is to ensure they are practising safely and put patient expectations at the heart of practice. These are two standards required by the NMC Code and also a central focus of PCRS-UK's mission to promote high standards of patient-centred care.

To support nurses as they prepare for revalidation PCRS-UK has updated its skills document to help practitioners review their respiratory expertise. The document sets out skill levels for delivering high quality respiratory care by nurses in primary care. It sets out in detail the various skills required for minimal, medium and maximum involvement in respiratory care.

Nurses can use the document to identify any gaps in their skills and knowledge. It will provide them with the evidence they need to request time and resources from their managers to attend any training courses they might need to fill those gaps. They will be able to argue that this training is essential for ensuring they are practising safely in line with the requirements of the new NMC Code.

Rate your respiratory skills

In order to help nurses rate their respiratory skills PCRS-UK has produced a new skills checklist. It covers various skills relating to asthma, COPD, inhaler devices, smoking and smoking cessation, allergic problems, symptoms in respiratory disease assessment, management and diagnosis, co-morbidities, communication and record keeping.

Nurses can rate themselves from "I feel very confident about this" to "I need to learn a lot more about this" to identify where there are gaps in their knowledge and skills.

Undergoing this self-rating process will enable nurses to evaluate in which areas of practice they might need either to refresh, update or extend their knowledge.

How PCRS-UK resources can help you prepare for revalidation:

- Opinion sheets[3]: These address key topics ranging from managing allergic rhinitis and asthma to a guide to using spirometry, and are an invaluable resource for updating and refreshing respiratory skills. Working through them will earn CPD points. For revalidation nurses will be required to complete 40 hours CPD over a three-year period.
- Practice improvement worksheets[4]: These enable nurses to assess where improvements could be made in their practice which would lead to better outcomes for patients and more efficient use of clinical time. Using these worksheets will help nurses to demonstrate the four principles of the new NMC Code: prioritising people; practising effectively; preserving safety and promoting professionalism and trust.
- Up to date guidance on COPD and asthma. Reading these guides will help to ensure you are following the latest, most up to date guidance. This will ensure you are practising safely and to a high standard.
- PCRS-UK local affiliated respiratory nurse groups. Joining a local nurse group will enable you to share good practice, keep yourself up to date and meet like-minded colleagues who are enthusiastic about providing high standards of respiratory care. These groups also provide opportunities for peer review, one of the requirements of revalidation.
- PCRS-UK annual conference[5]. Attending the PCRS-UK annual conference on 16-17 October at Whittlebury Hall, Northampton, will not only earn you CPD points but will ensure you hear about the latest clinical updates and cutting edge research. This year there is a range of back-to-basics skills workshops where you can update your hands-on clinical skills.
- PCRS-UK membership. Maintaining your membership of PCRS-UK each year will ensure you are kept up to date with the latest respiratory resources, which you can access on the PCRS-UK website, and hear about the latest developments in respiratory policy and guidance through e-alerts.

At a glance... Revalidation requirements

Nurses will need to ensure they are familiar with the NMC's new code of conduct[1], which governs standards of practice.

The Code places patient expectations at the heart of professional practice and reflects changes in healthcare over the last seven years, including the Francis report into care failings at Mid Staffordshire Foundation Trust.

The Code is built around four principles:

- prioritising people
- practising effectively
- preserving safety
- promoting professionalism and trust

The requirements of revalidation are that nurses:

- Complete 450 minimum hours of practice and 40 hours CPD over a three year period
- Obtain a minimum of five pieces of feedback over a year period from a range of sources
- Record at least five reflections on this feedback, the Code and/or learning activities undertaken, and have a professional development discussion with another NMC registrant, covering these reflections
- Obtain confirmation from a third party that they have met the requirements for revalidation.

The NMC recommends that nurses keep the evidence that they have met these requirements in a portfolio. It suggests that it may be helpful to structure the portfolio according to the themes in the Code.

References

1. The Code for nurses and midwives www.nmc.org.uk/standards/code
2. Post-acute COPD care bundle improvement worksheet https://www.pcrs-uk.org/resource/Improvement-tools/post-acute-copd-care-bundle-improvement-worksheet
3. PCRS-UK opinion sheets. https://www.pcrs-uk.org/opinion-sheets
4. PCRS-UK improvement worksheets https://www.pcrs-uk.org/worksheets
5. PCRS-UK annual conference https://www.pcrs-uk.org/pcrs-uk-annual-conference

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WORKING FOR HEALTHIER LUNGS

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

NICE busy with respiratory guidance

It seems to be a particularly busy period for respiratory work at NICE. Having done very little work on asthma for some time, NICE has been progressing two asthma guidelines in their work programme. Our Chair's perspective piece outlines the debates that the draft asthma diagnosis and monitoring guideline has prompted – and the article on FeNO elaborates on the potential role of this objective test. We await with interest final publication of this delayed guideline later this year.

The final scope of the Asthma management guideline has now been published so we know it will focus on pharmacological management of chronic asthma, review of pharmacological therapy and some aspects of non-pharmacological management of asthma (adherence, risk stratification, supported self-management and breathing exercises). Areas excluded from the guideline include comparison of inhaler devices, management of acute attacks, and biologics. We are pleased that the guideline development group includes 4 primary care professionals. The publication date for this guideline is expected to be June 2017.

Other respiratory work at NICE includes publication of a quality standard (QS) on tobacco harm reduction, and the development of quality standards for COPD and pneumonia for publication in January 2016. The tobacco harm reduction QS acknowledges that even if smokers don't quit completely, their health will benefit from reducing the amount of tobacco they use – whether this is by reducing the number of cigarettes they smoke, or whether they stop smoking but continue to use nicotine replacements. So the focus is on reducing the damage that tobacco can do rather than on quitting smoking. (see overleaf – To quit or not to quit)

A pneumonia quality standard is in its final stages. The draft QS which has been out to consultation proposed specific actions to be taken in primary care, based on a severity assessment, as well as guidance to secondary care for appropriate management in hospital. We are providing input to the consultation and look forward to seeing the final guidance.

COPD was one of the first conditions to have a quality standard (2011) and this is now being revised and updated. The draft QS revealed that they propose reducing the number of quality statements from 13 to 9, in order to focus attention on the areas of COPD care that are most in need of improvement. We contributed to the consultation in August following input from the members of our policy network aligned to COPD. For primary care the draft QS included the importance of post-bronchodilator spirometry, regular assessment of inhaler technique, assessment for eligibility for long term oxygen, and referral for pulmonary rehabilitation.

Asthma UK report on prescribing issues from National Review of Asthma Deaths

In June, Asthma UK published a report suggesting that, one year on from publication of the National Review of Asthma Deaths many asthma patients were still receiving medication deemed unsafe, and out of line with national guidelines. They analysed the notes of asthma patients in a number of practices across the country and extrapolated from the data gathered on these to the UK asthma population. They suggested that 22,000 people with asthma may be on long acting beta agonists (LABAs) or long acting muscarinic antagonists (LAMAs) without inhaled steroids (ICS) and as many as 100,000 people may be receiving over 12 short acting bronchodilators (SABAs) a year. PCRS-UK put these figures into perspective - 22,840 people prescribed a LABA or LAMA without ICS, and 106,742 people prescribed more than 12 short-acting bronchodilators a year represent only 0.4% and 2% respectively of the total 5.4 million people receiving treatment for asthma. The positive message for primary care is that the vast majority of people with asthma are therefore receiving appropriate medication.

Nevertheless, patient safety is paramount, and however small the numbers, any level of unsafe prescribing is a serious problem. PCRS-UK therefore continues to urge all practices to review their use of asthma medication by interrogating prescribing records on GP computer systems to ensure it is in line with the BTS/SIGN Asthma Guideline and safety guidance from the Medicines & Healthcare products Regulatory Agency (MHRA). The PCRS-UK practice improvement worksheet produced in response to the findings in NRAD outlines simple steps primary care health professionals can take to review and improve asthma care in their practices and provides appropriate supporting resources. We made this available to non-members following the report publication so that all primary care professionals could use it to improve care.

The Asthma UK report 'Patient safety failures in asthma: the scale of unsafe prescribing in the UK' http://www.asthma.org.uk/patient-safety

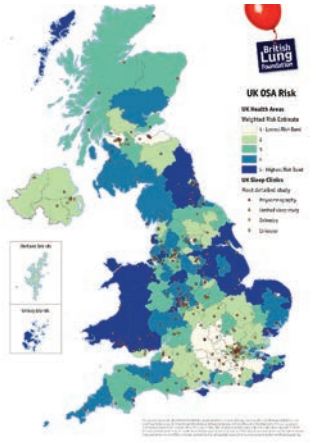
National asthma and COPD audits – an update

PCRS-UK was delighted when COPD was added to the list of national audits and we expected it to be only the second condition after diabetes to be including primary care data in its national audit. However, the furore over care.data in 2014 heightened sensitivities over the collection of patient data from practices, so that the decision was finally taken in August that no primary care data – except that available through routine collection by QOF – will be collected as part of the national COPD audit. This was clearly disappointing news for the committee that had been working for several years to get this off the ground, and for patients and primary care professionals. Instead the COPD audit will focus only on organisation of care and outcomes in secondary care, and pulmonary rehabilitation. The exception is that as care.data does not apply in Wales, the primary care audit will proceed in Wales this autumn. (The National Audit programme does not cover Scotland and Northern Ireland.)

So while we were pleased when it was announced in May that asthma has been added to the national audit programme – once again, it looks as though the high level controversy over data confidentiality will prevent primary care data being collected. This is clearly disappointing when the vast majority of asthma care takes place in primary care and we are currently looking at whether there is anything PCRS-UK can do further to influence the situation. We hope that in due course the care.data issues will be resolved and data collection for audit in primary care in England can be resumed.

Focus on obstructive sleep apnoea

PCRS-UK have endorsed an excellent resource from the British Lung Foundation which is designed to bring together guidance from a range of sources to inform the planning and commissioning of services for obstructive sleep apnoea (OSA) – the OSA Commissioning Toolkit. The BLF has been running an awareness campaign about OSA for several years and have brought the learning from the campaign together with clinical guidance to deliver a toolkit that will provide guidance to clinicians and managers who are developing a service for OSA. As well as 'Tips for GPs', there is a predicted risk map, which demonstrates which parts of the country are deemed to have the greatest population at risk of OSA. A handy calculator enables the prevalence of OSA in a region to be estimated by inputting local data, and the health economics around OSA are also included in the toolkit. We encourage you to look at how this toolkit could help with designing services locally in collaboration with commissioning colleagues.



Access the report at https://www.blf.org.uk/Page/OSA-toolkit

In brief – To quit or not to quit..... or try vaping?

There has been a lot of noise recently regarding tobacco smoking and vaping with e-cigarettes. The 'Smoking still kills' report, published by Action on Smoking and Health (ASH) in June, proposes new targets for a renewed national strategy to accelerate the decline in smoking prevalence over the next decade. This was followed by a review of the evidence on e-cigarettes from Public Health England in August, which reinforced the significantly reduced harm from using e-cigarettes compared to smoking tobacco. This was echoed by the NICE quality standard on reducing harm from tobacco, which promotes the use of any licensed nicotine replacement products for damage limitation. Debates still rage about whether e-cigarettes should be banned in public places alongside tobacco-containing cigarettes – Wales says yes, England says no – and medical organisations are divided. What is clear is that e-cigarettes are proving very popular – sales of other nicotine replacement products such as patches are falling – and sales of e-cigarettes have outstripped dental floss and canned soup. Watch this space!

Keep an eye out for our revised materials on stopping smoking as we will be keeping them up to date as EU legislation on tobacco and e-cigarettes comes into force in May 2016.

Getting the Basics Right

Fractional Exhaled Nitric Oxide testing


Fran Robinson talks to Carol Stonham a nurse practitioner, PCRS-UK nurse lead and vice chair of the PCRS-UK Education Committee, who has been carrying out FeNO testing for asthma for a number of years in her practice, the Minchinhampton Surgery, Gloucestershire. Carol says the test is so useful that now she would find diagnosing and monitoring asthma much more difficult without it.

What is a FeNO test?

Patients with allergic airway inflammation generally have higher than normal levels of nitric oxide (NO) in their exhaled breath. By measuring the concentration of NO in exhaled breath (fractional exhaled nitric oxide or FeNO), clinicians can identify inflammation in the lungs.

Why you need to know about FeNO testing

NICE consulted on draft guidance for the diagnosis and monitoring of asthma[1] in January this year in which FeNO tests were recommended to help conform the diagnose asthma in adults and children.

The draft guidance suggested that asthma should no longer be diagnosed on clinical symptoms or spirometry alone, or by a trial of steroids. It recommended spirometry as a first line of investigation and that a FeNO test should be offered if a diagnosis of asthma is being considered in adults and young people over the age of five.

The draft guidance also suggested that clinicians should use FeNO testing to help manage asthma in patients who continue to have symptoms despite being prescribed inhaled corticosteroids. The draft guidance has sparked considerable debate (see Chair's perspective page 8). Very few people use FeNO test currently, so we spoke to one person who has, Carol Stonham, to find out about its potential value in practice

Three reasons to take a FeNO measurement:

1: To assist in diagnosis

The FeNO test can help to diagnose airway inflammation and also determine when respiratory symptoms are not due to asthma.

Carol says: *"The problem with spirometry is that if patients are asymptomatic on the day they come in for the test, which measures obstruction in the airways, the result will be normal. The likelihood is they will still have some underlying inflammation and this is where the FeNO test is useful because it measures inflammation.*

"Taking a good, accurate clinical history is always the basis of suspecting an asthma diagnosis. However quite often the history is not straightforward – you think the patient has probably got asthma but it's not definite. In my experience it's those intermediate probability cases – about 60% of patients – where a FeNO test is really useful.

"I see it as being part of a jigsaw puzzle, it is not used on its own but is used in addition to other diagnostic criteria".

2: To aid treatment

The FeNO measurement can help the clinician to determine the likelihood of steroid responsiveness and can guide stepwise changes in anti-inflammatory medication: step-down dosing, step-up dosing, or discontinuation of treatment.

If a patient on a low dose inhaled steroid becomes symptomatic and compliance and inhaler technique have been checked, a FeNO test can be used to indicate whether they need more anti-inflammatory therapy.

Likewise a FeNO measurement can help the clinician assess whether to step down treatment. Carol says: "*We don't step patients down as often as we should - we are notoriously bad at doing that. There are many reasons why we don't: we don't have the confidence*

to do it; we don't know when to do it; we are not really sure how to do it; patients don't want to do it because they feel well - and those are all given, but not valid reasons. But high doses of medication are expensive and come with side effects for patients so we should step patients down when we can.

"If you have a patient whose asthma is under control: they have had at least three months when they have been really well, have not been using their rescue inhaler, have had no symptoms and are functioning well i.e. they are not reducing their activity and are not awake at night, then this could be a good time step them down.

"The beauty of the FeNO test is that it can help to reassure them that stepping down treatment is beneficial. You can do a test and give the patient a measurement then call them back a few weeks later and do another test to show them that the level of inflammation is not rising."

3: To identify poor adherence to treatment

The FeNO test can also help to determine whether patients are adhering to their prescribed corticosteroid treatment.

Carol explains: *"If a patient's FeNO level is rising and they are on a reasonable dose of steroid it's a good way of opening a conversation about inhaler technique or to ask them about how they are taking their medication. If they are not taking medication as prescribed, they will usually be happy to chat about it, especially when the raised FeNO level is suggesting something is amiss. Usually a four second break in the conversation is enough space for a patient to feel they need to 'confess'. . .*

"So if you have got a patient who isn't on board with their care you can use the FeNO test measurements to show that treatment can make a difference over a short period of time. Their FeNO measurement can drop from 68 to 32 in a matter of a couple of weeks, the patient starts feeling better and that helps them to grasp the concept that their treatment works. Patients also like it because they have a figure that they can see is improving."

How do you carry out a FeNO test?

A FeNO device is a hand held machine which requires a 10 second blow at 60 Litres a minute. It works like an alcohol breathalyser giving the results on the spot.

The patient first breathes out into the air to ensure any atmospheric nitric oxide (NO) is eliminated. They then seal their lips around the mouthpiece of the machine, take a full breath in and blow back out again into the machine. This then gives a clean measurement of NO in the exhaled breath. The patient is guided to breathe at the right flow rate by a computerised graphic. If the flow rate is not at the right level the machine will not give a measurement.

Carol says: *"There is a shorter test you can do for smaller children but I usually use the 10 second test for most patients over six years old."*

How much training is needed to use a FeNO device?

A short training is needed which is provided by the manufacturer either by coming in to the surgery or via online webinars. The practitioner needs to be shown how to use the machine and to be taught what the different FeNO measurements mean. For example tonsillitis or smoking can result in higher readings amongst other things.

What does it cost?

One of the FeNO machine manufacturers says the costs of the machine plus the consumables work out at £6 per test over 5 years or £450 per quarter. These prices are obviously dependent on the number of test done and are exclusive of VAT but provide a rough ballpark of the costs involved .

Carol believes that the FeNO test saves money by reducing unscheduled emergency GP appointments, A&E visits and hospitalisation and by ensuring clinicians put patients on the right medication first time and by improving compliance. Stepping down to appropriate doses of inhaled steroids also saves money.

References

1. Asthma: diagnosis and monitoring of asthma in adults, children and young people. NICE. January 2015 http://www.nice.org.uk/guidance/indevelopment/gid-cgwave0640

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GET STARTED WITH FeNO

NICE recommends FeNO testing

Be sure about asthma

NICE recommends FeNO* testing:

- For a faster and more accurate asthma diagnosis[1,2]
- To help manage symptomatic asthma patients[1]
- To help detect non-adherence to treatment[1]

...and because it is highly cost effective.[1,2]

*Fractional Exhaled Nitric Oxide

1. NICE diagnostics guidance Measuring FeNO in Asthma [DG12] 2014: http://www.nice.org.uk/guidance/dg12
2. NICE Draft guidance Asthma Diagnosis and Monitoring 2015: http://www.nice.org.uk/guidance/gid-cgwave0640/documents/asthma-diagnosis-and-monitoring-draft-guideline2

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Can be used with the AeroChamber Plus® spacer device. **Contraindications** Hypersensitivity to the active substances or to any of the excipients (HFA-134a, ethanol anhydrous, hydrochloric acid). **Warnings and precautions** Use with caution in patients with cardiac arrhythmias, aortic stenosis, hypertrophic obstructive cardiomyopathy, severe heart disease, occlusive vascular diseases, arterial hypertension, aneurysm, thyrotoxicosis, diabetes mellitus, phaeochromocytoma and untreated hypokalaemia. Caution should also be used when treating patients with known prolongation of the QTc interval (QTc > 0.44 seconds). Formoterol itself may induce QTc prolongation. Potentially serious hypokalaemia may result from $beta_2$-agonist therapy which may be potentiated by concomitant treatments and increase the risk of arrhythmias. Formoterol may cause a rise in blood glucose levels. As Fostair contains a corticosteroid, it should be administered with caution in patients with pulmonary tuberculosis or fungal/viral airway infections. Fostair treatment should not be stopped abruptly. Treatment should not be initiated during exacerbations or deteriorating asthma. Fostair treatment should be discontinued immediately if the patient experiences a paradoxical bronchospasm. *Systemic effects:* 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, decrease in bone mineral density, cataract and glaucoma and more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression and aggression. Prolonged treatment with high doses of inhaled corticosteroids may result in adrenal suppression and/or acute adrenal crisis. **Interactions** Beta-blockers should be avoided in asthmatic patients. Concomitant administration of other beta-adrenergic drugs may potentiate the adverse reactions of Fostair. Concomitant treatment with quinidine, disopyramide, procainamide, phenothiazines, antihistamines, monoamine oxidase inhibitors and tricyclic antidepressants can prolong the QTc interval and increase the risk of ventricular arrhythmias. L-dopa, L-thyroxine, oxytocin and alcohol can impair cardiac tolerance towards $beta_2$-sympathomimetics. Hypertensive reactions may occur following co-administration with monoamine oxidase inhibitors. Concomitant treatment with $beta_2$-agonists and xanthine derivatives, steroids or diuretics may potentiate hypokalaemic effects. Hypokalaemia may increase the likelihood of arrhythmias in patients receiving digitalis glycosides. **Fertility, pregnancy and lactation** Fostair should only be used during pregnancy or breast-feeding if the expected benefits outweigh the potential risks. **Effects on driving and operating machinery** Fostair is unlikely to have any effect on the ability to drive or operate machinery. **Side effects** *Common:* pharyngitis, oral candidiasis, headache, dysphonia. *Uncommon:* influenza, oral fungal infection, orophyaryngeal candidiasis, oesophyageal candidiasis, vulvovaginal candidiasis, gastroenteritis, sinusitis, rhinitis, pneumonia, granulocytopenia, allergic dermatitis, hypokalaemia, hyperglycaemia, restlessness, tremor, dizziness, otosalpingitis, palpitations, prolongation of QTc interval, electrocardiogram change, tachycardia, tachyarrhythmia, atrial fibrillation, hyperaemia, flushing, cough, productive cough, throat irritation, asthmatic crisis, diarrhoea, dry mouth, dyspepsia, dysphagia, burning sensation of the lips, nausea, dysgeusia, pruritus, rash, hyperhidrosis, urticaria, muscle spasms, myalgia, C-reactive protein increased, platelet count increased, free fatty acids increased, blood insulin increased, blood ketone body increased, blood cortisol decrease. *Rare:* ventricular extrasystoles, angina pectoris, paradoxical bronchospasm, angioedema, nephritis, blood pressure increased, blood pressure decreased. *Very rare:* thrombocytopenia, hypersensitivity reactions, including erythema, lips face, eyes and pharyngeal oedema, adrenal suppression, glaucoma, cataract, dyspnoea, exacerbation of asthma, growth retardation in children and adolescents, peripheral oedema, bone density decreased. *Unknown frequency:* psychomotor hyperactivity, sleep disorders, anxiety, depression, aggression, behavioural changes (predominantly in children) (Refer to SmPC for full list of side effects). **Legal category** POM **Packs and prices** £29.32 1x120 actuations. **Marketing authorisation number** PL 08829/0156. **Marketing authorisation holder** Chiesi Limited, 333 Styal Road, Manchester, M22 5LG **Date of preparation** June 2015

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. (address as above) Tel: 0161 488 5555.

Reference 1. MIMS. March-May 2015.

CHFOS20140934b. Date of preparation: July 2015.

Journal Round-Up

npj Primary Care Respiratory Medicine Key Summaries

A selection of short summaries of original research articles published in *npj Primary Care Respiratory Medicine*. The articles featured have been selected by the Primary Care Respiratory Update editorial board as being the most relevant and useful to primary care respiratory clinical practice in the UK. You can download freely any articles of interest from the website http://www.nature.com/npjpcrm/

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

Patient-reported side effects, concerns and adherence to corticosteroid treatment for asthma, and comparison with physician estimates of side-effect prevalence: a UK-wide, cross-sectional study

Vanessa Cooper, Leanne Metcalf, Jenny Versnel, Jane Upton, Samantha Walker & Rob Horne. *npj Primary Care Respiratory Medicine* 25, Article number: 15026 (2015) doi:10.1038/npjpcrm.2015.26 Published online 09 July 2015

Asthma: Corticosteroids from patient and professional perspectives

Asthma patients in a UK-wide study reported side effects of corticosteroid treatment at a higher frequency than estimates made by clinicians. Professor Rob Horne of University College London led a questionnaire-based cross-sectional study in collaboration with Asthma UK and Education for Health. Questionnaires were completed by 1,524 patients taking inhaled corticosteroids, 233 taking oral corticosteroids and 244 health professionals. An unexpectedly large proportion of people with asthma experienced side effects and had concerns about their treatment. For example, 46% of patients taking inhaled corticosteroids reported sore throat while health professionals estimated this would be 10%. Concerns about corticosteroids compromised adherence to treatment. Male participants and those who were older reported fewer side effects and had fewer concerns about their treatment. These findings have implications for the design of interventions to optimize asthma control.

HELPing older people with very severe chronic obstructive pulmonary disease (HELP-COPD): mixed-method feasibility pilot randomised controlled trial of a novel intervention

Susan Buckingham, Marilyn Kendall, Susie Ferguson, William MacNee, Aziz Sheikh, Patrick White, Allison Worth, Kirsty Boyd, Scott A Murray & Hilary Pinnock. *npj Primary Care Respiratory Medicine* 25, Article number: 15020 (2015) doi:10.1038/npjpcrm.2015.20 Published online 16 April 2015

Severe lung disease: Exploring initiatives for better care

A trial to improve care for patients with severe lung disease concludes that holistic treatment throughout the disease may be beneficial. Severe chronic obstructive pulmonary disease (COPD) has a massive physical and psychological impact on patients' lives, prompting calls for palliative care provision. In a pilot trial of elderly patients with very severe COPD, Hilary Pinnock and co-workers at the University of Edinburgh, Scotland, investigated the effectiveness of supportive home visits by a specialist respiratory nurse, who assessed patients' wellbeing and needs, and agreed upon a plan of action with them. Qualitative interviews with patients and professionals indicated that the holistic assessment was well received and appreciated. However, few actions resulted from the nurse's intervention, partly due to overlaps with existing care. The team believes integrating holistic assessment into routine COPD treatment may be more appropriate.

Effectiveness of community-based integrated care in frail COPD patients: a randomised controlled trial

Carme Hernández, Albert Alonso, Judith Garcia-Aymerich, Ignasi Serra, Dolors Marti, Robert Rodriguez-Roisin, Georgia Narsavage, Maria Carmen Gomez, Josep Roca & NEXES consortium. *npj Primary Care Respiratory Medicine* 25, Article number: 15022 (2015) doi:10.1038/npjpcrm.2015.22 Published online 09 April 2015

Chronic obstructive pulmonary disease: Investigating integrated care

Community-based integrated care (IC) for chronic obstructive pulmonary disease (COPD) improves outcomes but does not reduce hospitalization. Spanish researchers led by Carme Hernández at the

University of Barcelona conducted a randomized controlled trial to explore the effectiveness of a community-based IC service in preventing hospitalizations and emergency department visits. The service consisted of assessment and education, individualized care plans, call center access and coordination between different levels of care. Seventy-six stable frail COPD patients received the IC intervention for 12 months, while 84 received usual care. Hospital admissions, emergency department visits and mortality were then monitored for six years after return to normal care. The intervention improved clinical outcomes and decreased emergency department visits, but did not reduce hospital admissions. Patient risk analysis and workforce preparation were identified as key requirements for developing IC services.

Initial step-up treatment changes in asthmatic children already prescribed inhaled corticosteroids: a historical cohort study

Steve W Turner, Kathryn Richardson, Annie Burden, Mike Thomas, Clare Murray & David Price. *npj Primary Care Respiratory Medicine* 25, Article number: 15041 (2015) doi:10.1038/npjpcrm.2015.41 Published online 11 June 2015

Asthma: Stepping up treatment in children

Clinicians in the UK frequently opt to deviate from the guidelines for increasing treatment choices in children with asthma. When standard doses of inhaled corticosteroids (ICS) fail to control symptoms in children older than four years, guidelines recommend adding long-acting beta agonist (LABA), with other treatment options considered if symptoms persist. Stephen Turner at the University of Aberdeen and co-workers across the UK conducted a historical cohort study of treatment "step-up" choices in 10,793 children aged between 5 and 12. An increased dose of ICS was prescribed for 58% of the children. LABA was introduced for only 32%, combined in some cases with either a change of inhaler type or prescribing leukotriene receptor antagonist. Deviation from treatment guidelines appears to be an active decision based on patient characteristics including obesity, antibiotic therapy and rhinitis.

Prevalence of asthma–COPD overlap syndrome among primary care asthmatics with a smoking history: a cross-sectional study

Toni Kiljander, Timo Helin, Kari Venho, Antero Jaakkola & Lauri Lehtimäki. *npj Primary Care Respiratory Medicine* 25, Article number: 15047 (2015) doi:10.1038/npjpcrm.2015.47 Published online 16 July 2015

Asthma: Overlap with chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) affects many older asthmatic patients with a history of smoking but no previous COPD diagnosis. Finnish researchers led by Toni Kiljander of Terveystalo Hospital, Turku, investigated the prevalence of asthma-COPD overlap syndrome (ACOS) in a cross-sectional study of 190 primary care asthma patients. Spirometry studies and questionnaires revealed that 27.4% of the patients had ACOS. The best predictors of ACOS were age of 60 years or more and at least 20 pack-years of smoking history, each pack-year equating to 20 cigarettes per day for one year. Although ACOS appears to be clinically highly significant, little is known about its treatment as affected patients are typically excluded from therapy trials for asthma or COPD. More attention should be given to the possibility of ACOS in elderly asthmatics with a smoking history.

Patient perceptions of severe COPD and transitions towards death: a qualitative study identifying milestones and developing key opportunities

Amanda Landers, Rachel Wiseman, Suzanne Pitama & Lutz Beckert. *npj Primary Care Respiratory Medicine* 25, Article number: 15043 (2015) doi:10.1038/npjpcrm.2015.43 Published online 09 July 2015

Chronic lung disease: Identifying need for the palliative approach

Patient understanding and acknowledgement of advancing lung disease may be improved by identifying transition points in health deterioration. Chronic obstructive pulmonary disease (COPD) is a progressive condition leading to disabling shortness of breath, severe lifestyle disruption and death. However, many patients describe COPD as a way of life rather than a life-threatening illness, making identification of palliative care needs difficult. Amanda Landers at Nurse Maude Hospice, Christchurch, with scientists from across the region interviewed 15 patients to explore their perceptions of severe COPD. The team identified six common transition points described by the patients. The transitions include mourning the loss of recreational hobbies to the need for long-term oxygen therapy and worries about self-care. Discussing these pivotal transitions may help stimulate patients and health service professionals to change focus and plan for the future.

'I still don't know diddly': a longitudinal qualitative study of patients' knowledge and distress while undergoing evaluation of incidental pulmonary nodules

Donald R Sullivan, Sara E Golden, Linda Ganzini, Lissi Hansen & Christopher G Slatore. *npj Primary Care Respiratory Medicine* 25, Article number: 15028 (2015) doi:10.1038/npjpcrm.2015.28 Published online 16 April 2015

Lung screening: Improvements in patient communication essential

Renewed efforts are needed to alleviate patient stress and keep them informed following the diagnosis of small growths on the lungs. The discovery of so-called 'pulmonary nodules' during routine chest screening can cause considerable distress to patients. The nodules, though often benign, require monitoring via follow-up scans, leading to a period of uncertainty which potentially affects patients' well-being. In a longitudinal study involving interviews with 17 patients with newly diagnosed nodules, Donald Sullivan at Oregon Health and Science University, USA, and co-workers found that stress was often exacerbated by ineffective communication from medical staff. This led to patient misunderstandings about lung cancer risk, for example, which were compounded by the complex information in letters they received. Patients much preferred to speak to their primary care providers. The researchers call for improved staff training and education resources.

Exploring the impact of chronic obstructive pulmonary disease (COPD) on diabetes control in diabetes patients: a prospective observational study in general practice

Hilde D Luijks, Wim JC de Grauw, Jacobus HJ Bor, Chris van Weel, Antoine LM Lagro-Janssen, Marion CJ Biermans & Tjard R Schermer. *npj Primary Care Respiratory Medicine* 25, Article number: 15032 (2015) doi:10.1038/npjpcrm.2015.32 Published online 23 April 2015

Chronic obstructive pulmonary disease: Effects on control of diabetes

Further research is required to understand how the presence of lung disease may affect the treatment of type II diabetes in patients. People suffering from chronic obstructive pulmonary disease

(COPD) often have a co-existing disease, making both conditions more difficult to treat. To determine the impact of COPD on control of diabetes, Hilde Luijks and co-workers at Radboud University Medical Center in The Netherlands conducted a longitudinal study of 610 primary care patients with diabetes, 63 of whom also had COPD. There was no significant association between glycated haemoglobin levels and COPD. However, the researchers found that systolic blood pressure was significantly associated with COPD patients' socioeconomic status (SES), gradually increasing in middle and high SES groups, and decreasing in low SES groups. High body mass index increased systolic blood pressure in diabetes patients without COPD.

Preference, satisfaction and critical errors with Genuair and Breezhaler inhalers in patients with COPD: a randomised, cross-over, multicentre study
Sergi Pascual, Jan Feimer, Anthony De Soyza, Jaume Sauleda Roig, John Haughney, Laura Padullés, Beatriz Seoane, Ludmyla Rekeda, Anna Ribera & Henry Chrystyn. *npj Primary Care Respiratory Medicine* 25, Article number: 15018 (2015) doi:10.1038/npjpcrm.2015.18 Published online 30 April 2015

Chronic obstructive pulmonary disease: Patients prefer Genuair inhaler over Breezhaler
More patients preferred the multi-dose Genuair than the single-dose Breezhaler inhaler in a randomised, cross-over, multicentre study. An international research team led by Henry Chrystyn of the University of Huddersfield, UK, enrolled 128 patients with chronic obstructive pulmonary disease and moderate-to-severe airflow obstruction in a two-week study involving daily inhaler use. The inhalers contained placebo, while patients continued with their normal medication. Of the 110 patients who indicated a preference, 72.7% preferred the Genuair inhaler over the Breezhaler. Patients were more willing to continue using Genuair than Breezhaler. These differences were statistically significant. There was no difference in the number of patients who made critical errors of technique with each inhaler, and the overall incidence of errors was low. The authors recommend further research to compare Genuair with other inhalers over a longer time period.

Predictors of poor-quality spirometry in two cohorts of older adults in Russia and Belgium: a cross-sectional study
Eralda Turkeshi, Dmitry Zelenukha, Bert Vaes, Elena Andreeva, Elena Frolova & Jean-Marie Degryse. *npj Primary Care Respiratory Medicine* 25, Article number: 15048 (2015) doi:10.1038/npjpcrm.2015.48 Published online 23 July 2015

Respiratory disease: Effective lung function tests in elderly patients
A test used to assess how well a person's lungs are working should be used more often in elderly patients, Belgian researchers say. Eralda Turkeshi from the Catholic University of Louvain in Brussels and colleagues note that previous studies had found that elderly patients with cognitive impairment had difficulty performing a lung function blow test called 'spirometry'. However, their study of two groups of elderly patients in Belgium and Russia found that tests in over three-quarters of these patients met acceptable clinical standards after adjusting for gender, age and level of education. These tests should be used in older adults without restrictions based on mental or physical functioning, they concluded. Spirometry is a valuable tool for the diagnosis and management of respiratory diseases as well as for assessing overall health, they suggested.

Best of the rest

These reviews were prepared by Dr Basil Penney and published by Doctors.net.uk Journal Watch. They have been selected and edited for inclusion into *Primary Care Respiratory Update* by editor Dr Hilary Pinnock.

The Doctors.net.uk Journal Watch service covers other specialities as well as respiratory medicine. Doctors.net.uk is the largest network of GMC-registered doctors in the UK. To find out more about membership visit http://www.doctors.net.uk

Abbreviations used in these reviews are:

$	Dollars
ACOS	Asthma-COPD overlap syndrome
ACT	Asthma Control Test
AHR	Airway Hyper-responsiveness
ATS	American Thoracic Society
BHR	Bronchial hyper-responsiveness
BMI	Body Mass Index
C-ACT	Childhood Asthma Control Test
CI	Confidence Interval
CNS	Central Nervous System
COPD	Chronic Obstructive Pulmonary Disease
CRP	C-Reactive Protein
CVS	Cardiovascular System
EBA	Economic Burden of Asthma
ERS	European Respiratory Society
FENO	Fractional Exhaled Nitric Oxide
FEV1	Forced expiratory volume in 1 second
FVC	Forced vital capacity
GP	General Practitioner
GLI	Global Lung Initiative
H	Hours
IC	Integrated care
ICS	Inhaled corticosteroid
Kg	Kilogram
kg/m^2	Kilogram per metre squared
LABA	Long-acting beta-agonist
LLN	Lower Limit of Normal
Mg/mL	milligrams per millilitre
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
OR	Odds ratio
PC	Provocative concentration of methacholine
POCT	Point of Care Test
QoL	Quality of Life
RTI	Respiratory Tract Infection
SD	Standard Deviation
SES	Socio-economic status
UK	United Kingdom
USA	United States of America

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

Oseltamivir treatment for influenza in adults: a meta-analysis of randomised controlled trials

THE LANCET

Joanna Dobson, Richard J Whitley, Stuart Pocock, Arnold S Monto. *Lancet* 2015; 385: 1729–37;
http://dx.doi.org/10.1016/S0140-6736(14)62449-1

Oseltamivir selectively blocks the enzymatic activity of all influenza viruses, making it useful in prophylaxis and treatment for both seasonal and pandemic disease. Concerns exist however about it's efficacy and adverse effects and whether these outweigh the benefits.

This group conducted a meta-analysis of all available randomised treatment trials of oseltamivir in adults. They used individual patient data and included both published and unpublished trials thereby overcoming previous concerns regarding potential publication bias. They analysed participants who were identified as influenza-infected (intention-to-treat infected population), all treated participants (intention-to-treat population) and safety populations.

Data were included from nine trials (4328 patients). In the intention-to-treat infected population, they noted a 21% shorter time to alleviation of all symptoms for oseltamivir versus placebo recipients. The median times to alleviation were 97.5 h for oseltamivir and 122.7 h for placebo groups (difference –25.2 h, 95% CI –36.2 to –16.0). For the intention-to-treat population, the estimated treatment effect was attenuated but remained highly significant (median difference –17.8 h).

In the intention-to-treat infected population, they noted fewer lower respiratory tract complications requiring antibiotics more than 48 h after randomisation (4.9% oseltamivir vs 8.7% placebo, risk difference –3.8%, 95% CI –5.0 to –2.2) and also fewer admissions to hospital for any cause (0.6% oseltamivir, 1.7% placebo, risk difference –1.1%, 95% CI –1.4 to –0.3).

Regarding safety, oseltamivir increased the risk of nausea (9.9% oseltamivir vs 6.2% placebo, risk difference 3.7%, 95% CI 1.8–6.1) and vomiting (8.0% oseltamivir vs 3.3% placebo, risk difference 4.7%, 95% CI 2.7–7.3). They recorded no effect on neurological or psychiatric disorders or serious adverse events.

These findings show that oseltamivir in adults with influenza accelerates time to clinical symptom alleviation, reduces risk of lower respiratory tract complications, and admittance to hospital, but increases the occurrence of nausea and vomiting.

Effects of weight loss on airway responsiveness in obese adults with asthma

CHEST

Smita Pakhale, Justine Baron, Robert Dent, Katherine Vandemheen, Shawn D. Aaron; *CHEST* 2015;147(6): 1582 -1590;
http://dx.doi.org/10.1378/chest.14-3105

Research suggests that the incidence of asthma is 1.47 times greater in obese people than non-obese people and that a three-unit increase in BMI is associated with a 35% increase in the risk of asthma. Few studies have examined whether weight loss in obese people with asthma improves asthma outcomes and of these few rely on appropriate physiological tests for asthma to determine study eligibility (ie, airway hyper-responsiveness (AHR), reversibility of airway obstruction).

This Canadian, prospective, controlled, parallel-group study, followed 22 obese participants with asthma aged 18 to 75 years with a BMI ≥ 32.5 kg/m^2 and AHR (provocative concentration of methacholine causing a 20% fall in FEV_1 [PC 20] < 16 mg/mL). Sixteen participants followed a behavioural weight reduction program for 3 months, and six served as control subjects.

The primary outcome was change in AHR over 3 months. Changes in lung function, asthma control, and quality of life were secondary outcomes.

At study entry, participant mean (SD) age was 44 (SD 9) years, 95% were women, and mean BMI was 45.7 (SD 9.2) kg/m^2. After 3 months, mean weight loss was 16.5 (SD 9.9) kg in the intervention group, and the control group had a mean weight gain of 0.6 (SD 2.6) kg.

There were significant improvements in PC 20 (P=0.009), FEV_1 (P=0.009), FVC (P=0.010), asthma control (P <0.001), and asthma quality of life (P=0.003) in the intervention group, but these parameters remained unchanged in the control group. Physical activity levels also increased significantly in the intervention group but not in the control group.

Weight loss in obese adults with asthma can improve asthma severity, AHR, asthma control, lung function, and quality of life. These findings support the need to actively pursue healthy weight-loss measures in this population.

Influenza vaccination for NHS staff: attitudes and uptake

BMJ Open Respiratory Research

Dinesh Shrikrishna, Siân Williams, Louise Restrick and Nicholas S Hopkinson. *BMJ Open Resp Res* 2015;2:e000079.
http://dx.doi.org/10.1136/bmjresp-2015-000079

Annual vaccination against influenza (flu) is recommended for all UK NHS staff to reduce the risk of contracting the virus and transmitting it to patients. However, vaccination uptake in England for the 2013–2014 was only 54.8% for healthcare workers with direct patient contact.

The aim of this study was to investigate staff attitudes to flu vaccination to see how this may influence their decision to be vaccinated. An online survey was sent to staff members across 6 NHS trusts, asking if staff had been vaccinated in the preceding flu season (2013–2014); the survey included questions about beliefs and attitudes to the vaccination, scored on a 5-point Likert scale.

3059 NHS staff members responded to the survey. 68% reported being vaccinated in the preceding year. Doctors were the most likely group to have been vaccinated (doctors 72%, nurses 65%, clerical 63%, other staff members 68%).

Using a stepwise regression model, the survey response retained as a positive predictor of having been vaccinated was 'people working in healthcare should have the flu vaccination every year' ($p<0.001$), and the responses retained as negative predictors were 'the flu vaccination will make me unwell' ($p<0.001$) and 'the flu vaccination was too much trouble for me' ($p<0.001$). Doctors had a greater tendency to disagree with the statement that 'the flu vaccination will make me unwell' compared to other staff members.

Addressing NHS staff beliefs around the need for vaccination, and removing practical barriers to vaccination, may help increase uptake. Alleviating the concerns of particular staff groups regarding adverse effects of the vaccine may also be of benefit in improving uptake.

Interaction effect of psychological distress and asthma control on productivity loss?

Grégory Moullec, J. Mark FitzGerald, Roxanne Rousseau, Wenjia Chen, Mohsen Sadatsafavi, the Economic Burden of Asthma (EBA) study team. *Eur Respir J* 2015;45:1557–1565 http://dx.doi.org/10.1183/09031936.00141614

Little is known about the potential synergistic effect of comorbid psychological distress and uncontrolled asthma on productivity loss.

This Canadian population-based study [conducted as part of a larger 1-year longitudinal study the Economic Burden of Asthma (EBA) study] aimed to narrow this evidence gap by quantifying productivity loss, in terms of presenteeism and absenteeism, as a function of level of asthma control and presence of psychological distress, in employees with asthma.

300 adults with asthma were prospectively recruited between Dec 2010 and Aug 2012. Psychological distress and productivity loss due to absenteeism and presenteeism were measured using validated instruments, and asthma control was ascertained using the 2010 Global Initiative for Asthma management strategy. The authors used two-part regression models to study the contribution of uncontrolled asthma and psychological distress to productivity loss.

Compared with reference group (controlled asthma + no psychological distress), people with uncontrolled asthma but no psychological distress had a weekly productivity loss of Canadian $286 (95%CI $276–297). People with psychological distress had a weekly productivity loss of Canadian $465 ($445–485) even if their asthma was well controlled. Having uncontrolled asthma made no further difference to the productivity loss Canadian $449 (437–462).

In patients without psychological distress, uncontrolled asthma was associated with an increased productivity loss, but made no further difference in the presence of psychological distress. This finding can be explained by the fact that the contribution of psychological distress to productivity loss is so large that there is no room for synergy with asthma control.

Future studies should assess the impact of interventions that modify psychological distress in patients with asthma.

Monitoring strategies in children with asthma: a randomised controlled trial

Sandra Voorend-van Bergen, Anja A Vaessen-Verberne, Hein J Brackel, Anneke M Landstra, Norbert J van den Berg, Wim C Hop, Johan C de Jongste, Peter J Merkus, Mariëlle W Pijnenburg. *Thorax* 2015;70:543–550. http://dx.doi.org/10.1136/thoraxjnl-2014-206161

While monitoring of asthma control in children is recommended the best monitoring strategy is not known.

The 'Better Asthma Treatment: Monitoring with ACT and Nitric oxide' study randomised controlled, partly blinded, parallel group multicentre trial studied two monitoring strategies for their ability to improve asthma outcomes in comparison with standard care: web-based monthly monitoring with the (Childhood) Asthma Control Test (ACT or C-ACT) and 4-monthly monitoring of FeNO.

280 children aged 4–18 years (mean age 10.4 years, 66% boys) with a diagnosis of asthma, and treated in one of seven hospitals were randomised to one of the three groups. In the web group, treatment was adapted according to ACT obtained via a website at 1-month intervals; in the FeNO group according to ACT and FeNO, and in the standard care group according to the ACT at 4-monthly visits. The primary endpoint was the change from baseline in the proportion of symptom-free days.

After 1 year, neither of the novel strategies had improved the number of symptom-free days more than standard care. However, monthly web-based ACTs resulted in a clinically relevant decrease of ICS dose, while maintaining asthma control. FeNO monitoring modestly improved asthma control selectively in children aged <12 years without the need for higher ICS doses.

The children were all under hospital care and almost half of all eligible children refused to participate in the study, which may limit the conclusions due to selection bias.

Neither of the two novel monitoring approaches improved asthma control, though seemed to achieve control with reduced doses of ICS. Future studies should test the combined strategy of web-based monitoring in combination with FeNO measurements during clinic visits.

Narrative review of primary care point-of-care testing (POCT) and antibacterial use in respiratory tract infection (RTI)

Jonathan Cooke, Christopher Butler, Rogier Hopstaken, Matthew Scott Dryden, Cliodna McNulty, Simon Hurding, Michael Moore and David Martin Livermore. *BMJ Open Resp Res* 2015;2: e000086. http://dx.doi.org/10.1136/bmjresp-2015-000086

Antimicrobial resistance is a global healthcare and economic problem. There is a need to avoid unnecessary prescriptions many of which are for respiratory tract infections (RTIs) in the community. Studies suggest little benefit is achieved from the prescription of antibiotics, except in elderly patients at high risk of pneumonia. Potentially, primary care prescribers can use point-of-care testing to inform their management of disease.

This narrative review of the literature was undertaken to ascertain the value of C reactive protein (CRP) and procalcitonin measurements to guide antibacterial prescribing in adult patients presenting

to GP practices with symptoms of respiratory tract infection (RTI). Studies included randomised controlled trials, controlled before and after studies, cohort studies and economic evaluations.

Many studies demonstrated that the use of CRP tests in patients presenting with RTI symptoms reduces antibiotic prescribing by 23.3% to 36.16%. Procalcitonin is not currently available as a POCT but has shown value in patients admitted to hospital with RTI. GPs and patients report good acceptability for a CRP point-of-care testing and economic evaluations show cost-effectiveness of CRP over existing RTI management in primary care. NICE pneumonia guidelines now make recommendations for use of CRP in assisting in diagnosis.

Point-of-care tests increase diagnostic precision for GPs in the better management of patients with RTI. CRP point-of-care testing can improve targeting of antibacterial prescribing by GPs and contribute to national antimicrobial resistance strategies. Health services need to develop ways to ensure funding is transferred in order for point-of-care testing to be implemented.

Airflow limitation by the Global Lungs Initiative equations in a cohort of very old adults

EUROPEAN RESPIRATORY *journal*

Eralda Turkeshi, Bert Vaes, Elena Andreeva, Catharina Matheï, Wim Adriaensen, Gijs Van Pottelbergh and Jean-Marie Degryse. *Eur Respir J* 2015;46:123–132 http://dx.doi.org/10.1183/09031936.00217214

Correct identification of airflow limitation in very old adults is important as it may reduce inappropriate COPD diagnosis and use of COPD medications, along with their side-effects.

The cut-off for forced expiratory volume in 1 second (FEV_1)/forced vital capacity (FVC) defining airflow limitation for chronic obstructive pulmonary disease (COPD) is still contested. ATS/ERS support the use of the lower limit of normal (LLN) at the 5th percentile of the frequency distribution of values of a reference "healthy" never-smoker population of equivalent age and sex. The fixed cut-off approach leads to over diagnosis of COPD in older adults, while the LLN cut-off approach is dependent on age-specific reference values. These have been lacking for adults aged >80 years or have been extrapolated from younger populations, until recently when the Global Lungs Initiative (GLI) all-age reference equations for different ethnic groups and populations aged 3–95 years were made available.

This Belgian population-based prospective cohort study assessed airflow limitation prevalence by the lower limit of normal (LLN) of Global Lungs Initiative (GLI) 2012 reference values and its predictive ability for all-cause mortality and hospitalisation in 411 very old adults (aged ⩾80 years) compared with the fixed cut-off.

9.2% had airflow limitation by GLI-LLN and 27% by fixed cut-off, without good agreement (kappa coefficient ⩽0.40) with GP-reported COPD (9%). Only airflow limitation by GLI-LLN was independently associated with mortality (adjusted hazard ratio 2.10, 95%CI 1.30 to 3.38). FEV_1/FVC <0.70 but ⩾GLI-LLN (17.8%) had no significantly higher risk for mortality or hospitalisation.

In a cohort of very old adults, airflow limitation by GLI-LLN has lower prevalence than by fixed cut-off, independently predicts all-cause mortality and does not miss individuals with significantly higher all-cause mortality and hospitalisation.

Effects of quitting cannabis on respiratory symptoms

EUROPEAN RESPIRATORY *journal*

Robert J. Hancox, Hayden H. Shin, Andrew R. Gray, Richie Poulton and Malcolm R. Sears. *Eur Respir J* 2015;46:80–87 http://dx.doi.org/10.1183/09031936.00228914

Moderate levels of cannabis use are associated with proximal airway inflammation and symptoms of bronchitis. These associations persist after adjusting for tobacco smoking and also occur in those who only smoke cannabis, indicating that cannabis can cause bronchitis independently of tobacco. Little is known about the persistence of symptoms after stopping cannabis use.

This group from New Zealand studied the effect of quitting cannabis use in the Dunedin Multidisciplinary Health and Development Study, a population-based birth cohort of 1,037 people (52% male). Participants have been followed throughout childhood and into adulthood. Follow-up rates have been high with 95% of the surviving cohort continuing to participate in the most recent assessment at age 38 years. A previous analysis of this study found that many cannabis users had symptoms of bronchitis at the age of 21 years.

Participants were asked about cannabis and tobacco use at ages 18, 21, 26, 32 and 38 years. Symptoms of morning cough, sputum production, wheeze, dyspnoea on exertion and asthma diagnoses were ascertained at the same ages. Frequent cannabis use was defined as ⩾52 occasions over the previous year.

Associations between frequent cannabis use and respiratory symptoms were analysed using generalized estimating equations with adjustments for tobacco smoking, asthma, sex and age.

Frequent cannabis use was associated with morning cough (OR 1.97, p<0.001), sputum production (OR 2.31, p<0.001) and wheeze (OR 1.55, p<0.001). Reducing or quitting cannabis use was associated with reductions in the prevalence of cough, sputum and wheeze to levels similar to nonusers.

Frequent cannabis use is associated with symptoms of cough, sputum production and wheeze independently of tobacco smoking. These symptoms tend to improve in people who quit indicating that the airway inflammation caused by cannabis may be largely reversible.

Gait patterns in COPD: the Rotterdam Study

EUROPEAN RESPIRATORY *journal*

Lies Lahousse, Vincentius J.A. Verlinden, Jos N. van der Geest, Guy F. Joos, Albert Hofman, Bruno H.C. Stricker, Guy G. Brusselle and M. Arfan Ikram. *Eur Respir J* 2015; 46: 88–95 http://dx.doi.org/10.1183/09031936.00213214

In patients with COPD, muscle weakness precedes the development of functional limitations, which can result in an increased risk of falling. Even without injuries, a fall can negatively impact on quality of life through fear of falling, which often inhibits performance of activities. Although causes of falls are often multifactorial, the majority occur during walking and gait analysis may be the best tool to predict the risk of falls . Gait is affected by various organ systems, such as the CNS, CVS and musculoskeletal system, and poor gait is a strong risk factor of death. COPD may affect gait through any of these systems.

This large (n=1,094), population-based cohort Rotterdam Study (age ⩾55 years), investigated associations of COPD with various gait domains (including Rhythm and Pace) and explored a potential link with falling.

Those with COPD (n=196) exhibited worse Rhythm compared with those with normal lung function (n=898), independent of age, sex, height, education, smoking or analgesic use, especially when dyspnoea and severe airflow limitation or frequent exacerbations (Global Initiative for Chronic Obstructive Lung Disease group D: –0.83 SD, 95%CI –1.25 to –0.41 SD) were present.

A lower FEV_1 was associated with worse Rhythm and Pace, including lower cadence and gait velocity, respectively. Importantly, fallers with COPD had significantly worse Rhythm than non-fallers with COPD.

Given the cross-sectional analysis and the retrospective interrogation of falls, causality cannot be inferred: -the worse Rhythm in COPD patients may lead to more falls, or falls in COPD patients may aggravate anxiety and unsecured gait, leading to worse Rhythm.

Further research should investigate the underlying mechanisms of these associations, to enable development of proper intervention strategies to prevent falling in patients with COPD.

Large observer variation of clinical assessment of dyspnoeic wheezing children

Archives of Disease in Childhood

Jolita Bekhof, Roelien Reimink, Ine-Marije Bartels, Hendriekje Eggink, Paul L P Brand. *Arch Dis Child* 2015;100:649–653. http://dx.doi.org/10.1136/archdischild-2014-307143

Evaluating the severity of dyspnoea in children is important in clinical decision-making and evaluation of treatment. The usefulness of the clinical assessment of dyspnoea is strongly determined by its reliability and is often performed by different professionals. The aim of this observational study from the Netherlands was to determine the intraobserver and interobserver variation of common clinical findings in children with acute severe dyspnoea and wheeze.

27 acutely wheezing children (aged 3 months–7 years) were recorded in the emergency department on video before and after treatment with inhaled bronchodilators. These video recordings were independently assessed by nine observers scoring wheeze, prolonged expiratory phase, retractions, nasal flaring and a general assessment of dyspnoea on a Likert scale (0–10). Assessment was repeated after 2 weeks to evaluate intra-observer variation.

Intra-observer variation was modest, and inter-observer variation was large for most clinical findings in children with dyspnoea. The measurement error induced by this variation was too large to distinguish potentially clinically relevant changes in dyspnoea after treatment in two-thirds of observations.

The poor inter-observer reliability of clinical dyspnoea assessment in children limits its usefulness in clinical practice and research, and highlights the need to use more objective measurements in these patients.

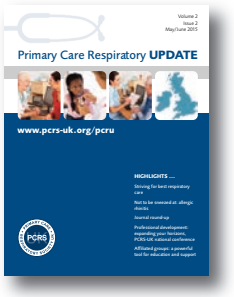
PCRS-UK News Round-Up

TELL US WHAT YOU THINK...

We are keen to hear from you what you think of the *Primary Care Respiratory Update*. Is it useful? Do you like the centre-fold pull out charts that we produce from time to time? Do you like having summaries from other respiratory related journals?

Enter this short (it takes less than five minutes) survey to tell us your views
Visit **https://www.surveymonkey.com/r/PCRU Review** to take part

Make sure you submit your feedback before 30th October 2015



NEW PCRS-UK EXECUTIVE MEMBER

PCRS-UK is delighted to announce the election of Oonagh Potts to the PCRS-UK Executive. Oonagh is a nurse practitioner and lead nurse in primary care. Oonagh is the group leader for the PCRS-UK affiliated group, Fylde Respiratory Forum, and she is a regional trainer for Education for Health.

Commiserations to those who were unsuccessful in the election. However, we look forward to their input through other committees within PCRS-UK.

NEW PCRS-UK REGIONAL LEADS

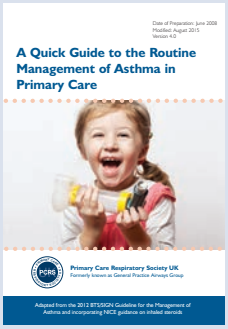
Jackie Abbey and Basil Penney have recently been appointed regional leads for PCRS-UK for Wales and the North East respectively.

You can see who your regional lead is at https://www.pcrs-uk.org/ pcrs-uk-regional-leads and contact them directly via our Members Directory. Simply log in to the PCRS-UK website and then go to http://www.pcrs-uk.org/directory.

Regional leads are shown with the symbol 

LATEST RESOURCES

PCRS-UK Quick Guide to the Diagnosis and Management of Asthma

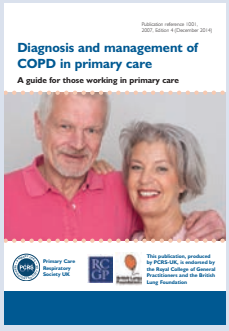


PCRS-UK is delighted to announce the rev- ision of the PCRS-UK Quick Guide to the Diagnosis and Management of Asthma. This 'Quick Guide' to the routine management of asthma in primary care is based on the British Thoracic Society (BTS) and Scottish Intercollegiate Guideline Network (SIGN) British Guideline on the Management of Asthma, May 2008, revised edition published October 2014 https://www.brit-thoracic.org.uk/guidelines-and-quality-standards/asthma-guideline/ supported by the recommendations of the Royal College of Physicians National Review of Asthma Deaths and the guidance published by NICE on the use of inhaled steroids in the management of asthma TA131 and TA1384 and the NICE Quality Standard for Asthma.

This Quick Guide also takes into consideration the approach proposed by NICE in the draft guideline on the diagnosis and monitoring of asthma that has recently been put out for consultation. At various points we allude to the draft NICE recommendations.

The Quick Guide attempt to demystify asthma diagnosis and provide sound pragmatic and succinct guidance on diagnosing this condition in children and adults and explores current management supported by evidence-based guidance. To download your copy of the guideline visit https://www.pcrs-uk.org/resource/Guidelines-and-guidance/AQG

PCRS-UK Quick Guide to the Diagnosis and Management of COPD



The ever popular PCRS-UK Quick Guide to the Diagnosis and Management of COPD has had a minor revision to take account on new drug therapies available in COPD. The Quick Guide, endorsed by the Royal College of General Practitioners and British Lung Foundation, offers concise and structured information based on national guidance for the diagnosis and management of COPD in an easily digestible format. Download your copy of the guideline at https://www.pcrs-uk.org/resource/Guidelines-and-guidance/QGCOPD

Severe Asthma E-Learning course now available

A Severe Asthma programme developed by Respiratory Education UK in conjunction with PCRS-UK and funded by Novartis is now available. This eLearning programme is free of charge and designed for practitioners in primary care who have some understanding of asthma management. It will take you approximately 45 minutes to complete and will allow you to print off your own certifi-

PCRS-UK News Round-Up

cate of completion. To access the on-line course please visit http://lms.innovesolutions.co.uk/shared/start/key:GSKMFPJU

GOVERNMENT SIGNALS NEW STRATEGY TO DRIVE DOWN SMOKING RATES

The government has indicated that it is committed to developing a new five year tobacco control strategy as its previous approach Healthy Lives, Healthy People comes to an end. Health minister Jane Ellison, made the comments at the launch of the ASH (Action on Smoking and Health) Smoking Still Kills report,[1] which has been endorsed by PCRS-UK.

The report outlines ambitious targets to reduce smoking rates in the UK and sets out recommendations for working with the Government and local authorities to put them into practice.

It recommends that healthcare professionals should adhere to NICE smoking cessation guidance[2] when helping smokers to quit. This advises using brief interventions and referring patients to smoking cessation services where appropriate. The report adds that clinicians should increase the support and information available to smokers, who are unable to quit and should encourage them to switch to less harmful sources of nicotine, in line with the principles set out in the NICE guidance on tobacco harm reduction.[3] Following input from PCRS-UK, ASH included a recommendation that training on providing very brief advice on smoking cessation should be included in the core curricula of all education programmes for healthcare professionals.

PCRS-UK evidence-based online smoking cessation resources provide essential information for clinicians who want to use the most effective ways of helping patients to quit visit https://www.pcrs-uk.org/smoking-cessation.

1. Smoking Still Kills ASH 2015. www.ash.org.uk/files/documents/ASH_962.pdf
2. National Institute for Health and Care Excellence (NICE). Smoking cessation guidance. February 2008. http://www.nice.org.uk/guidance/ph10
3. NICE Quality Standard. Smoking tobacco harm reduction approaches July 2015 http://www.nice.org.uk/guidance/qs92

Other News

ASTHMA UK - SPIKE IN ASTHMA ADMISSIONS PREDICTED AS NEW SCHOOL YEAR BEGINS

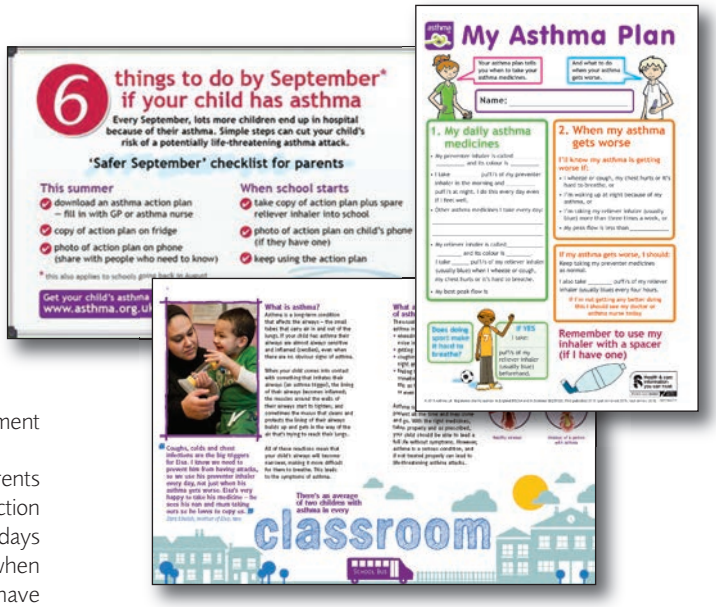
Every September there is a spike in childhood asthma admissions according to Asthma UK as pupils return to school.

There are various theories for this peak in admissions:

- Children not taking their preventer inhalers during the summer holidays
- High levels of environmental allergens in late summer
- Higher stress levels as a result of returning to school
- Exposure to respiratory viral infections in the school environment

Over the summer holidays Asthma UK has been encouraging parents of primary school aged children to download one of its new child action plans so they can establish good routines over the summer holidays to avoid the likelihood of being affected by the above factors when they return to school. Asthma UK action plans for children have recently been updated to reflect the latest BTS/SIGN asthma guidelines and include new pointers for parents about how to get the most from their child's action plan, including:

- Make it easy for you and your family to find it when you need it
- Take a photo and keep it on your mobile (and your child's mobile if they have one)
- Stick a copy on your fridge door
- Share your child's action plan with school, grandparents and babysitter (a printout or a photo).



To downloaded a free copy of the new action plan go to www.asthma.org.uk/downloads

Some of you may have taken part in the PLEASANT study in which the parents of children with asthma in intervention practices were sent a letter in August reminding them to maintain their child's preventer medication to protect them against this surge in asthma attacks just after the school terms starts. The study is complete and the results are awaited... Watch this space!

British Lung Foundation Professionals

Bethany Bateman at BLF highlights the role of BLF professionals

British Lung Foundation (BLF) professionals are health care professionals (HCPs) with a special interest in respiratory care. We want to create a network of BLF Professionals, pooling all of our passion to fight lung disease, helping us to work together and subsequently achieve more.

There are hundreds of HCPs around the country supporting the BLF work in lots of ways. They are talking to those affected by lung disease at our Breathe Easy support groups. They are helping raise awareness by speaking to the media and writing blogs for our website. They're informing our work as we endeavour to influence government and NHS policy for the better, and they are ensuring we are giving people living with lung disease accurate and helpful information through our leaflets and website. For all the projects and campaigns with which HCPs help, we have set up our BLF Professionals network - to recognise the hard work HCPs are doing to fight lung disease, and to ensure that patients and colleagues know about it too.

So many HCPs are doing a wonderful job supporting their own patients, but want to be able to reach out and make a difference in the wider respiratory world. Being a part of BLF Professionals gives them an opportunity to do so.

Of course there are various benefits for HCPs who join the BLF Professionals network, such as bursaries for work shadowing, priority booking for study days, and £30 reimbursement against PCRS-UK membership. There are also opportunities for joint working with our regional managers, and evaluations that enable BLF Professionals to feed into the future of the programme (as well as help us secure more funding for it). However, most HCPs join the programme for the difference they can make to patients and to the wider fight to reduce the impact of lung disease.

A BLF Professional badge can even inspire greater confidence in patients. Here's what Jo Wright, whose husband Dave is living with idiopathic pulmonary fibrosis (IPF), has to say about being supported by a BLF Professional, Sarah: "I think I feel more confident that my nurse is a BLF Professional as it makes me feel she would have more expertise, more contacts and greater access to resources. The name BLF conjures up an image of a very professional and knowledgeable organisation, giving me more peace of mind – I find it very comforting to know my nurse is part of a well-known organisation. I can't praise Sarah enough for how caring and supportive she is. I want to thank her and all BLF Professionals for the work they are doing and the awareness they are bringing to others."

Of course, we don't want to wear out HCPs by asking them to do everything. By telling us the type of activity they're interested in – media work, patient support, information review, or anything else – we know who we can call on when we need help and when we have opportunities with which they are most likely to want to get involved. However, in order to take advantage of all the opportunities we have, we need the network to grow. We want to do everything we can to support patients and fight lung disease across the UK, and we need your help to do it.

To find out more about becoming a BLF Professional, visit the BLF website https://www.blf.org.uk/Page/blf-professionals

British Lung Foundation

Supporting you and your patients

We provide a range of support and information for people living with COPD and other lung conditions.

Our support includes:

- The BLF Helpline: **03000 030 555**
- A national network of **Breathe Easy** support groups
- Comprehensive COPD information online: **www.blf.org.uk/COPD**
- A range of leaflets and booklets for your patients: **www.blf.org.uk/publications**
- COPD patient passport available in print and online: **www.blf.org.uk/passport**

Helping you develop your services

We also provide support and advice on service improvements and redesign across the respiratory pathway.

We offer:

- Bespoke training packages
- Awareness campaigns to support early diagnosis
- Organise patient engagement
- And much more: **www.blf.org.uk/hcp**

To find out more, please contact:

- **020 7688 5555**
- **enquiries@blf.org.uk**

Leading the **fight** against **lung disease**

Delivering Excellence Locally

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

Delivering Excellence Locally in West Yorkshire


Francesca Robinson talks to **Dr Anuj Handa**

Strong clinical relationships are being forged and best practice shared in Yorkshire by the PCRS-UK affiliated West Yorkshire Respiratory Network.

The network's quarterly meetings bring together clinical respiratory leads from primary, community and secondary care and public health with key personnel from Clinical Commissioning Group (CCG) and commissioning support units.

The group has been looking at variation in health care outcomes by comparing different CCGs and then drilling down into different practices within the CCGs.

At a recent meeting one of the CCGs with few avoidable respiratory admissions shared information about the systems they have in place.

Action points from the meeting for CCGs included:

- Identify key points in the patient pathway where improvement is needed, look at those issues and work collaboratively to find solutions
- Consider what needs to happen at system level, not just in primary or secondary care.

At the next meeting each CCG brought three problems with which they struggle in their area and then worked with their locality colleagues in small groups on how they were going to tackle them. The issues included quality of spirometry, respiratory education of primary care professionals, disparities in availability of pulmonary rehabilitation and communication across sectors within localities. Feedback on the success of those measures will be shared at the next meeting.

Dr Anuj Handa, a Huddersfield GP and PCRS-UK Lead for West Yorkshire, says: "*The Network was able to review the five-year strategic plan for each CCG in West Yorkshire area, looking at the focus for respiratory care. This enabled the network to generate a work plan based on the common themes in West Yorkshire; to be used to focus the aspects of respiratory care that local CCGs are interested in and need to tackle.*"

"*How to improve commissioning for QIPP (Quality Innovation Productivity Prevention) will be the focus of the next session. We will be moving the meeting away from a lecture and workshop format with less talking from the front and more working in locality groups to commit to specific pieces of improvement work.*"

"*We have made a list of best practice in our area, for example introducing an asthma template for SystmOne practices, to share with the group. In addition we will looking at how services can be improved using the PCRS-UK improvement tools including the EQUIP tools.*"

Sheffield CCG recently joined the group after meetings were promoted through mailings to PCRS-UK members across the region and advertised on the PCRS-UK website. The network is now working to spread the word and extend its representation into the Humber region.

The West Yorkshire Respiratory Network recently affiliated to PCRS-UK and Dr Handa says support from PCRS-UK enabled wider marketing of the meetings as well as the opportunity to talk with experienced leaders including Stephen Gaduzo, and to get input from Bronwen Thompson on making the best use of NHS policy has really helped the group to develop. Local support from Lisa Chandler a former strategic health authority respiratory manager has also been invaluable.

Delivering Excellence Locally in the East of England


Francesca Robinson interviews **Daryl Freeman**

A new venture to bring together healthcare professionals with a special interest in respiratory care has been getting underway in the East of England.

This has been a strong area for networks of nurses for some time, and several local groups affiliated to PCRS-UK provide a forum where ideas can be shared and mutual support given. The only formal Strategic Clinical Network with a focus on respiratory disease is also in the East of England area. So it seemed the perfect time and place to bring together respiratory interested professionals from across the area.

The inaugural meeting in Peterborough was held alongside the East Anglian Thoracic Society (EATS) meeting. The meeting started with a presentation on the diagnosis and management of interstitial lung disease from Professor Sherwood Burge followed by a session on palliative care by Geraldine Burge, a discussion about integrated care and a debate about NHS England's Five Year Forward View. Community nurses shared news about the projects with which they are involved.

Dr Daryl Freeman, a Norfolk GP, East of England PCRS-UK lead and Clinical Director NHS England- Midlands & East (East), said the meeting was oversubscribed and feedback was very positive. One person said they would have driven 150 miles to hear Professor Sherwood's presentation. Many of those present did not know much about the Five Year Forward View and felt the meeting provided them with a useful update.

"*There was tremendous enthusiasm from everyone who came to the meeting. We have to travel a long way from East Anglia to national meetings in other parts of the country so there is a real need for a local meeting to enable us to share good practice in respiratory care.*

"*The plan for the next meeting in November is to have a primary care session probably focussing on sleep disorders and asthma-COPD overlap syndrome before the tea break, then to join the EATS members for combined sessions to include respiratory prescribing across boundaries to highlight the issues we face when prescribing for patients in primary, community and secondary care settings*," said Dr Freeman.

Affiliated Groups in East of England

- Peterborough Nurses Respiratory Interest Group
- The West Norfolk Respiratory Nurse Group
- North Norfolk FORD
- FORD (Focus on Respiratory Disease)
- South Norfolk FORD
- Suffolk Respiratory Group
- Barking, Dagenham & Havering Respiratory Interest Group
- Thanet Respiratory Interest Group

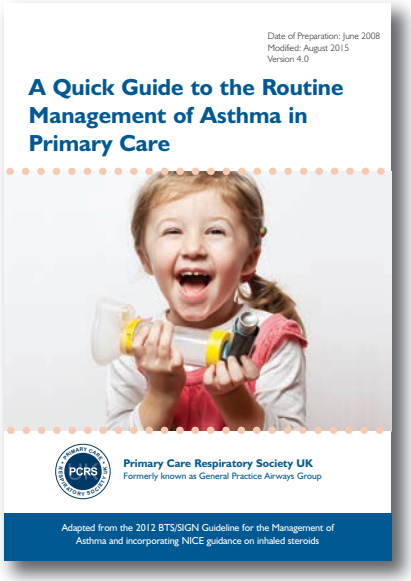
To contact a group leader log-in to the PCRS-UK website and go to the Members Directory at https://www.pcrs-uk.org/directory

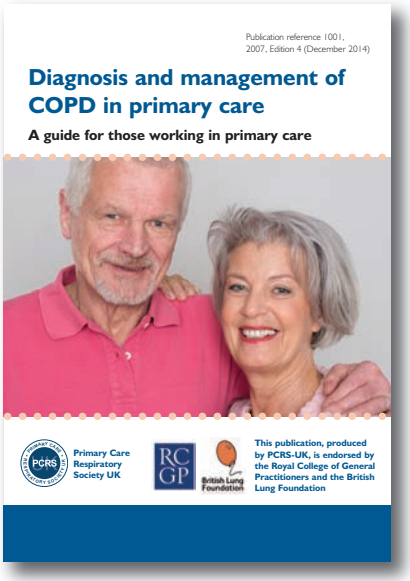
Affiliating your locality network to PCRS-UK offers an opportunity to share the work you do on a wider platform. PCRS-UK can offer advice and support and promote any events to its members in the local area. If you are interested in affiliating your group please contact us for more information at info@pcrs-uk.org

PCRS-UK Resources and Improvement Tools: Reviewing diagnosis

In addition to the newly updated Quick Guides for the Diagnosis and Management of asthma (https://www.pcrs-uk.org/resource/Guidelines-and-guidance/AQG) and COPD (https://www.pcrs-uk.org/resource/Guidelines-and-guidance/QGCOPD) both of which offer sound, evidence based guidance on how to diagnosis these conditions.

PCRS-UK has also developed two Practice Improvement Worksheets to support health-care professionals:-





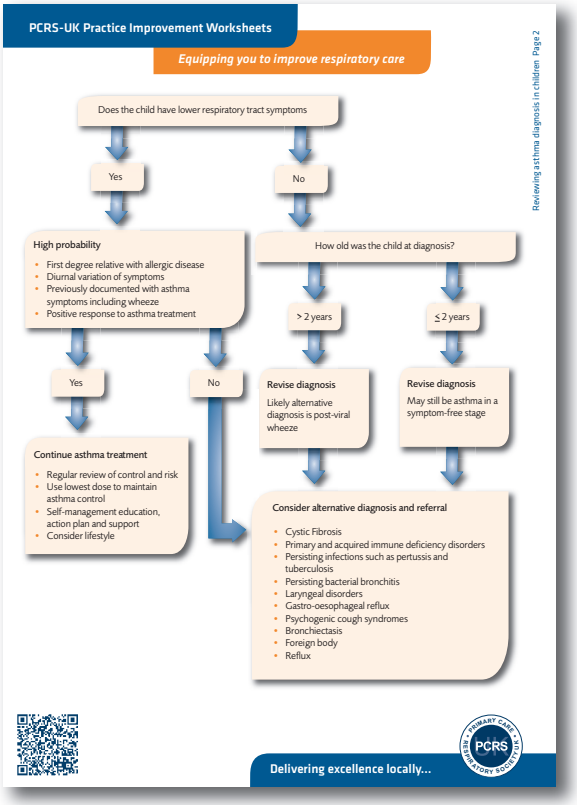
Reviewing Asthma Diagnosis in Childhood

Many children suffer from lower respiratory symptoms in early childhood. For some, this will be asthma, but for many, they have had a complex post-viral illness, often associated with Respiratory Syncytial Virus (RSV), resulting in intermittent symptoms of cough, wheeze and breathlessness.

It is important not to label children as having asthma if they do not have a confirmed diagnosis of asthma. Young adults with an erroneous label of childhood asthma may find that their career options are inappropriately limited as a consequence of an early and inaccurate diagnosis of asthma.

Confirming a diagnosis in very young children can be difficult, and it is therefore important to review children with a diagnosis of asthma or wheezing in infancy as they get older. This simple worksheet with a practical flow chart enables healthcare practitioners to review a prior diagnosis and consider possible alternative diagnoses.

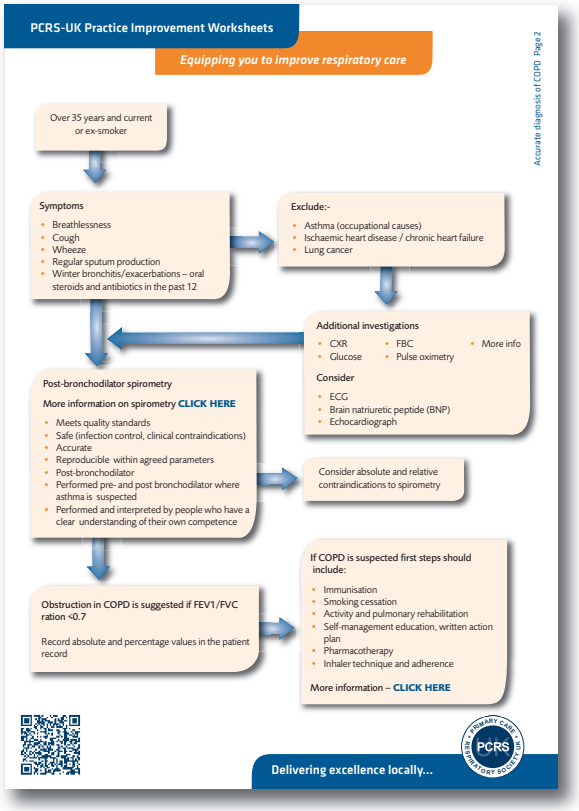
The worksheet, available to members of PCRS-UK can be downloaded at https://www.pcrs-uk.org/resource/Improvement-tools/reviewing-asthma-diagnosis-children-improvement-worksheet



Accurate Diagnosis of COPD

Early and accurate diagnosis of COPD is important, as all too often people do not have their diagnosis confirmed until they are well down the trajectory of functional decline. There are a range of different diseases (both respiratory and non-respiratory) that present with symptoms similar to COPD, and these should be considered and excluded as part of a making a COPD diagnosis. This simple worksheet offers a practical flow chart to support busy healthcare practitioners on the steps to consider when diagnosing COPD.

The worksheet, available to members of PCRS-UK, can be downloaded at https://www.pcrs-uk.org/resource/Improvement-tools/accurate-diagnosis-copd-improvement-worksheet



What every GP should know about rarer lung conditions

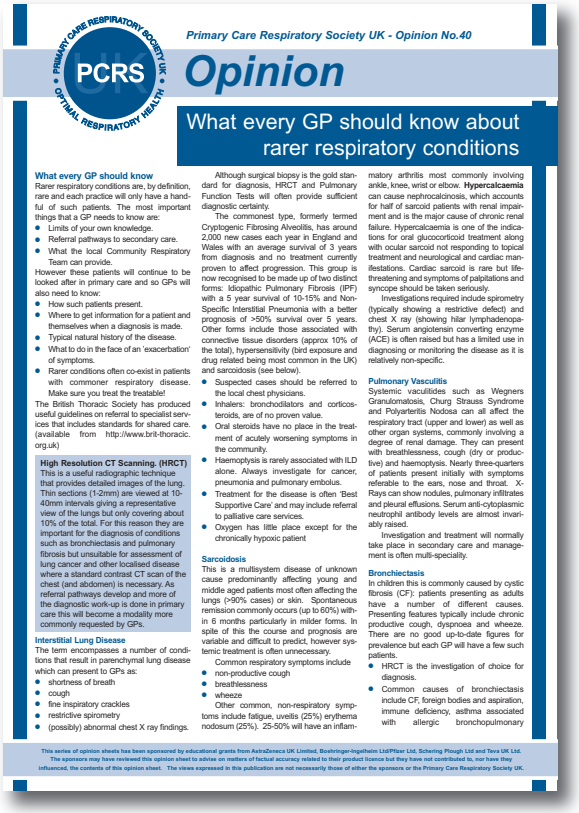
Rarer respiratory conditions are, by definition, rare and each practice will only have a handful of such patients. The most important things that a GP needs to know are:

- Limits of your own knowledge.
- How such patients present.
- Referral pathways to secondary care.
- What the local Community Respiratory Team can provide

This simple, two-page guide includes brief advice on rarer lung conditions including their presentation, investigations and other steps to take when considering these rarer disorders such as interstitial lung disease, sarcoidosis, pulmonary vasculitis, bronchiectasis pulmonary hypertension, tuberculosis and aspergillosis.

You can download your copy of the opinion sheet at https://www.pcrs-uk.org/resource/Opinion-sheets/what-every-gp-should-know-about-rarer-lung-conditions-opinion-sheet

Our excerpt from *npj Primary Care Respiratory Medicine* this issue features an article on the diagnosis and management of interstitial lung disease see page 40.



New respiratory leaders inspired by PCRS-UK leadership event

Creating a case for change and getting it heard was the title of the PCRS-UK respiratory leaders' event in June that gave delegates the opportunity of creating, building and delivering a business case.

The two-day event helped delegates to look at the structure of a business case, review real life examples then develop and deliver an actual business case.

This was the second respiratory leaders' event that Clare Cook, clinical lead for respiratory services at Bristol Community Health had attended along with her colleague and operational lead Laura Turner. "We use these events as an opportunity to have an away day together to plan projects and take a 'temperature check' of other services similar to ours. It is definitely worth the budget and the time for both of us to go," she said.

She added: "*I am new in my leadership post, as is Laura, and it helps to learn from other people's experiences and check our priorities against other people's priorities.*

"*I found one of the speakers, Catherine Blackaby, Senior Improvement Manager with NHS Improving Quality, very inspiring. She delivered a presentation on how to put together a business case. I have mirrored that process about providing evidence for the things I want to achieve from the business plan and was recently successful in getting an uplift of £100,000 for our budget.*"

Dr Helen Ward, community lead and consultant respiratory physician at the Royal Wolverhampton Hospitals NHS Trust and a member of the British Thoracic Society integrated working party, says she found the meeting very informative - the presentations on developing a business case and on recent policy updates were particularly useful.

"*There were some very good leaders and experts in the room and there was a lot of knowledge shared around the tables where we sat.*

"*I'm a relatively new consultant, so a leadership course was really useful not just from the business aspect but also to meet people within primary care who have passion for respiratory – that is really valuable for me from a networking point of view.*

"*The meeting was very welcoming and the people running it came across as being very nurturing of the people coming through - they are there to support you as leaders because that support is not always available elsewhere*," said Dr Ward.

Dr Noel Baxter, GP and member of the PCRS-UK executive, who helps to run the respiratory leaders programme, said: "*It was great to chair a meeting with such a diversity of respiratory interested health professionals learning from each other and working together. I am confident that this course is contributing to more coordinated care for patients with complex health problems.*"

The next respiratory leaders meeting will be held on 6th-7th November 2015 at the Lea Marston Hotel, Sutton Coldfield. The theme is "Delivering value for patients and demonstrating outcomes". For more information visit our website at https://www.pcrs-uk.org/respiratory-clinical-leadership-workshop

PCRS-UK Affiliated Group Leaders Meeting 15th October 2015

Scanning the Horizon – How to get ahead of the game

Whether you're an existing leader of a PCRS-UK Affiliated Group, or you're thinking about setting one up make sure you don't miss out on our annual meeting for group leaders.

This year's event is a really practical workshop-style meeting to help inspire potential new group leaders and support existing group leaders to get the most of your meetings, help you with some of the challenges of running meetings and give you some useful tips and ideas for topics to share with your local networks all relevant to primary care and respiratory health.

The meeting also offers you an opportunity to network with other experienced affiliated group leaders and share ideas and tips.

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PERSPECTIVE OPEN

Interstitial lung disease: raising the index of suspicion in primary care

Joseph D Zibrak[1] and David Price[2]

Interstitial lung disease (ILD) describes a group of diseases that cause progressive scarring of the lung tissue through inflammation and fibrosis. The most common form of ILD is idiopathic pulmonary fibrosis, which has a poor prognosis. ILD is rare and mainly a disease of the middle-aged and elderly. The symptoms of ILD—chronic dyspnoea and cough—are easily confused with the symptoms of more common diseases, particularly chronic obstructive pulmonary disease and heart failure. ILD is infrequently seen in primary care and a precise diagnosis of these disorders can be challenging for physicians who rarely encounter them. Confirming a diagnosis of ILD requires specialist expertise and review of a high-resolution computed tomography scan (HRCT). Primary care physicians (PCPs) play a key role in facilitating the diagnosis of ILD by referring patients with concerning symptoms to a pulmonologist and, in some cases, by ordering HRCTs. In our article, we highlight the importance of prompt diagnosis of ILD and describe the circumstances in which a PCP's suspicion for ILD should be raised in a patient presenting with chronic dyspnoea on exertion, once more common causes of dyspnoea have been investigated and excluded.

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INTRODUCTION

Interstitial lung disease (ILD) is an umbrella term, synonymous with diffuse parenchymal lung disease, for a large group of lung diseases affecting the tissue and space around the air sacs of the lungs, which cause progressive scarring of lung tissue through inflammation and fibrosis.[1] ILD is uncommon compared to other pulmonary problems seen in general practice. The prevalence of ILD has been estimated as 81/100,000 in males and 67/100,000 in females.[2]

Primary care physicians (PCPs) often misdiagnose ILD as chronic obstructive pulmonary disease (COPD), bronchitis, emphysema, asthma, heart disease or other common diseases with similar symptoms.[3] In a US survey of 1,583 patients, 54.6% reported a delay of $\geqslant 1$ year between the onset of breathing problems and receiving a diagnosis of pulmonary fibrosis.[3]

A diagnosis of ILD should be confirmed by a pulmonologist working with a radiologist experienced in the differential diagnosis of ILD, but PCPs have a crucial role to play in recognising the need for further evaluation. This paper describes the circumstances in which a PCP's suspicion for ILD should be raised in a patient with chronic dyspnoea and the importance of referring patients who may have ILD promptly to a pulmonologist to confirm the diagnosis.

WHAT IS ILD?

The American Thoracic Society and European Respiratory Society define ILD as a heterogeneous group of non-neoplastic disorders resulting from damage to the lung parenchyma by inflammation and fibrosis that diminish the lung's capacity for alveolar gas diffusion.[1] The latest classification of ILDs is shown in Figure 1.[1,4] Most ILDs are 'restrictive' pulmonary disorders, i.e., the lungs have a reduced ability to expand on inhalation. This is in contrast to 'obstructive' pulmonary disorders such as asthma, COPD and emphysema, in which the airways of the lungs become narrowed or blocked so the patient cannot exhale completely. Some forms of ILD are associated with environmental or occupational exposures (e.g., asbestosis or silicosis), the use of certain drugs[5] or with connective tissue disorders.[2,6,7] Others, including the idiopathic interstitial pneumonias, have no known cause.[1] Some cases of ILD do not meet the specific definitions for any form of ILD and are considered 'unclassifiable'. This may be the case when there are non-specific or conflicting clinical, radiological or histopathological findings, or when patients are unable or unwilling to undergo diagnostic procedures.[8]

Idiopathic pulmonary fibrosis (IPF) is the most common idiopathic interstitial pneumonia.[1] IPF also has the worst prognosis; the 5-year survival rate (20–40%)[9] is lower than many common cancers.[10] While most cases of IPF are sporadic, familial forms of the disease may account for ~5–20% of cases.[11,12] The prevalence of IPF in the US has been estimated as 14.0–27.9 cases/100,000 using narrow case definitions and as 42.7–63 cases/100,000 using broad case definitions.[13] In Europe, the estimated prevalence of IPF was 1.25–23.4 cases/100,000.[13] The incidence of IPF increased with age and was higher in men than in women (10.7 vs. 7.4 per 100,000 patient-years in the US).[13]

RECOGNISING ILD

As highlighted in the international guidelines for the diagnosis of ILD, a diagnosis of ILD should be made by review of clinical, pulmonary, radiological and possibly histopathological features.[4] However, PCPs have a key role to play in identifying patients who may have ILD and referring them to a pulmonologist or an ILD clinic with a multidisciplinary team. PCPs can also help detect non-idiopathic forms of ILD by reviewing relevant occupational, environmental and drug exposures, as well as by assessing the presence of extrapulmonary symptoms suggestive of connective tissue disease.

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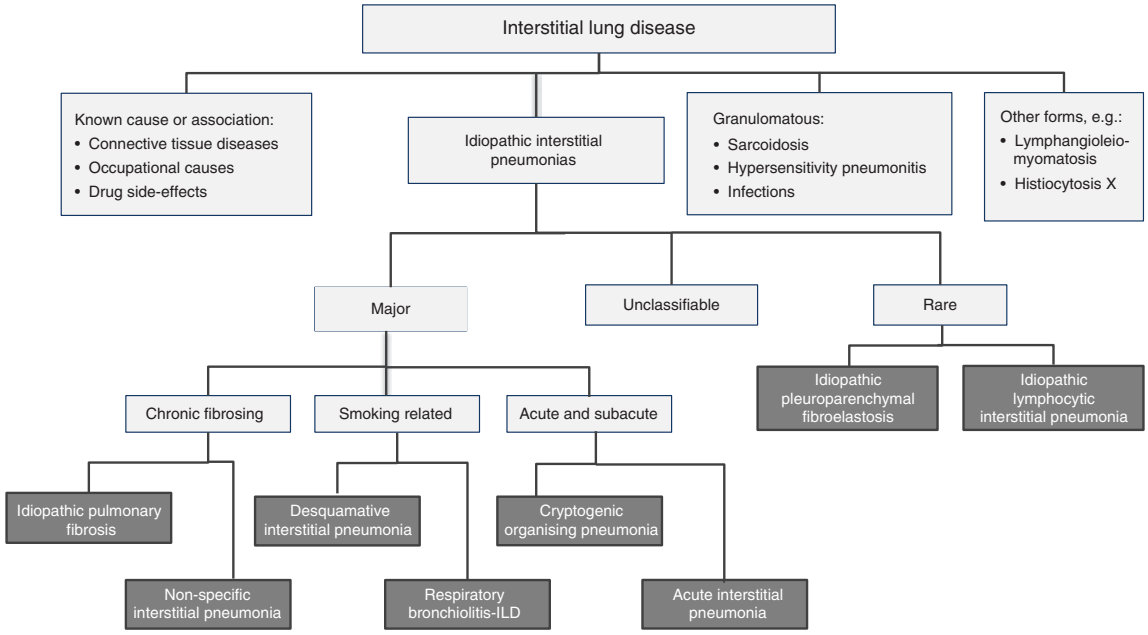

Figure 1. Classification of ILDs.[4]

One of the challenges for PCPs in determining whether a patient may have ILD is the lack of specificity of its symptoms. Breathlessness and cough are seen in many diseases that commonly occur in middle-aged and elderly patients, most notably COPD and heart failure. Once non-respiratory causes of breathlessness have been excluded, PCPs should consider the possibility of ILD in all middle-aged or elderly patients who present with unexplained chronic dyspnoea on exertion, particularly those who are more breathless than would be expected based on their lung function and other contributory factors such as obesity, or who have a cough of more than several months' duration. The suspicion of ILD should be raised in patients with a presumptive obstructive lung disease or congestive heart failure who fail to benefit from regular therapy, and in patients with a non-specific chest X-ray.

A diagnosis of asthma or COPD should be confirmed using the appropriate diagnostic criteria. If diagnostic criteria are not met, further assessments should be performed to ensure that the correct diagnosis is made and patients are not given inappropriate therapies. A diagnosis of COPD should be confirmed by spirometry. Obstructive lung disease is characterised by a disproportionate reduction of maximal airflow from the lung in relation to the maximal volume that can be displaced from the lung (forced vital capacity (FVC)), defined by a significantly reduced forced expiratory volume in 1s (FEV_1)/FVC ratio.[14] Spirometry may be normal in the early phases of ILD, and patients with both pulmonary fibrosis and emphysema often have lung volumes within normal limits.[15] However, restrictive lung disease tends to be characterised by a reduction in total lung capacity and a normal or elevated FEV_1/vital capacity ratio.[16] Patients with ILD tend to show a reduced FVC, which declines as the disease progresses,[17] and many experience oxygen desaturation with only minimal exertion. PCPs often order chest radiographs in patients with chronic respiratory symptoms. As patients with COPD have largely normal chest radiographs, the presence of even subtle abnormalities such as increased interstitial markings or nodular opacities warrants further investigation. Patients presenting with a history of $\geqslant$6 months' breathlessness on exertion with no evidence of obstruction should be assessed for conditions that may cause breathlessness, such as chronic heart failure, asthma, COPD, bronchiectasis, pleural effusion, abdominal splinting and anaemia.[18] If these conditions are not present, patients should not only have spirometry and diffusing capacity for carbon monoxide measured, but also be referred for a high-resolution computed tomography scan. High-resolution computed tomography scans are vital for the diagnosis of ILD and allow for differentiation among the types of ILD.[19]

PCPs should take a comprehensive medical history in all patients presenting with chronic dyspnoea, including questions about their employment history, as some forms of ILD such as asbestosis and silicosis are linked to environmental factors,[1] and individuals who have worked with livestock or birds, or been subjected to high exposure to dust or fumes, may have a higher risk of IPF.[20] A medical history may reveal the use of medications that may cause drug-induced ILD (DILD), such as chemotherapeutic agents (e.g., cyclophosphamide, carmustine, busulphan), antibacterial agents (e.g., sulphonamide, nitrofurantoin) or cardiovascular agents (e.g., amiodarone).[5] The likelihood of developing DILD is idiosyncratic and largely unpredictable and the underlying mechanisms are not fully understood.[5] PCPs should also assess for extrapulmonary symptoms, such as fatigue, joint pain and stiffness, which may suggest connective tissue disease.[20]

An early clinical test that can aid diagnosis of ILD is lung auscultation. Patients with many types of ILD commonly present with inspiratory 'crackles'. These crackles, which are discontinuous, short sounds similar to those heard when slowly separating Velcro, are heard even in the early stages of ILD when the patient takes slow, deep breaths.[21] Unlike the crackles occasionally heard in healthy elderly subjects, which disappear after several deep breaths, these fine crackles are heard consistently at end inspiration and originate from the basal areas of the lung, progressing to the upper zones as disease becomes more severe.[21] Although higher in frequency,[21] crackles associated with ILD may be confused with the crackles heard in patients with heart failure. Finger clubbing, where reduced oxygenation of the blood

causes the fingertips and fingernails to spread out and become rounder, is seen in 25–50% of patients with IPF.[22]

The differential features of ILD and COPD are shown in Table 1.

Table 1. Differential features of ILD and COPD

	ILD	*COPD*
Physical examination		
Inspiratory crackles[21]	✓	×
Wheezing[14]	×	✓
Finger clubbing [22]	✓	×
Spirometry[16]		
Reduction in TLC	✓	×
Reduced FEV_1/FVC ratio	×	✓
Response to bronchodilators	×	✓
Chest radiographs[1]	Show specific patterns of abnormality	Largely normal

Abbreviations: COPD, chronic obstructive pulmonary disease; FEV_1, forced expiratory volume in 1s; FVC, forced vital capacity; ILD, interstitial lung disease.

IMPORTANCE OF PROMPT DIAGNOSIS OF ILD

Patients with ILD who are misdiagnosed may receive inappropriate and ineffective treatment. Such treatment may be harmful physically (e.g., patients may experience adverse effects of medication without gaining any benefit) or psychologically (e.g., it is disheartening for patients to be given several treatments that do not work). There are few recommended treatments for ILD, although corticosteroids appear to be effective in the treatment of cryptogenic organising pneumonia and desquamative interstitial pneumonia.[23] The latest international guidelines for the management of IPF, issued in 2011, did not recommend any specific pharmacological treatments for the chronic treatment of IPF, but long-term oxygen therapy was strongly recommended for patients with clinically significant resting hypoxaemia and a weak recommendation was made for pulmonary rehabilitation in the majority of patients.[12]

The anti-fibrotic agent pirfenidone has been approved for the treatment of IPF in Japan, India, China and Canada and for the treatment of mild to moderate IPF in Europe, but has not been approved in the US. An additional Phase III trial of pirfenidone has recently reported results and showed that pirfenidone reduced the decline in FVC percent predicted.[24] There are several other agents in clinical development for the treatment of IPF, the most advanced of which is the tyrosine kinase inhibitor nintedanib, for which the results of two Phase III INPULSIS trials have recently been announced.[25] In both the INPULSIS trials, nintedanib significantly reduced the decline in FVC over the 52-week treatment period, consistent with a slowing of disease progression. In contrast, warfarin and triple therapy with prednisone, azathioprine and *N*-acetylcysteine have been shown to be harmful for patients with IPF,[26,27] highlighting the importance of potential therapies being evaluated in controlled trials before they are used in clinical practice. Acetylcysteine alone appears not to be harmful, but to have no efficacy as a treatment for IPF.[28]

PCPs treating patients with ILD should address comorbidities such as gastroesophageal reflux disease , pulmonary hypertension (PH) and emphysema. The prevalence of gastroesophageal reflux disease in patients with ILD[29] and IPF[30] is very high and there is some evidence that the use of gastroesophageal reflux disease treatments in patients with IPF is a predictor of longer survival time.[31] PH is also common in patients with ILD.[32] In patients with IPF, PH has a reported incidence of 32–84% and is associated with decreased exercise capacity and worse prognosis.[33] Patients with IPF, emphysema and PH have a particularly dismal prognosis.[15] Patients with IPF may also have an increased risk of acute coronary syndrome and deep vein thrombosis.[34]

The clinical course and prognosis of the different types of ILD are highly variable.[1] Even if pharmacological treatment is not appropriate, it is important that a patient receives the correct diagnosis so that their physician can provide appropriate information and support. Data from a US-based survey of 1,448 patients with IPF or caregivers of patients with IPF highlight that there is a need for improved patient education regarding diagnosis and management.[3] Less than half of the respondents felt well informed about treatment options, and the role of pulmonary rehabilitation, supplemental oxygen and lung transplantation.[3] Receiving a diagnosis with such a poor prognosis may be difficult for the patient, and they may need time to start to come to terms with the diagnosis before they can fully comprehend the information they receive. Patients may also benefit from contacting patient organisations for advice and support.

The majority of patients with ILD should have the opportunity for referral to a pulmonary rehabilitation programme. Comprehensive programmes involve not only exercise training with aerobic conditioning, strength and endurance training and respiratory therapy, but also behaviour modification techniques.[35] In a large cohort of 402 patients with IPF, pulmonary rehabilitation had a positive effect on patients' pulmonary function and quality of life.[36]

At present, lung transplant is the only therapy that has been shown to improve survival in patients with IPF, but it is available only to selected patients.[22] The eligibility criteria for lung transplantation vary between and even within countries, but international guidelines stress that the early referral of patients with IPF for transplantation should be promoted.[37] Prompt diagnosis of IPF also makes it more likely that a patient will meet the criteria for participation in a clinical trial; most clinical trials in IPF are restricted to patients with mild or moderate impairment of lung function.

CONCLUSIONS

ILD presents with symptoms similar to other chronic respiratory conditions and is frequently misdiagnosed in primary care, most commonly as COPD and heart failure. Prompt diagnosis of ILD is important to ensure that patients receive appropriate care and support, and to enable them to be considered for lung transplantation or clinical trials. PCPs have a key role to play in expediting the diagnosis of ILD by referring middle-aged/elderly patients with unexplained chronic dyspnoea and cough who do not meet the diagnostic criteria for other diseases to an ILD centre or pulmonologist with expertise in this group of disorders.

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JDZ and DP drafted this article, with medical writing assistance from Clare Ryles and Wendy Morris of Fleishman-Hillard Group. The authors are fully responsible for all content and editorial decisions, were involved at all stages of manuscript development, and have approved the final version of the review, which reflects the authors' interpretation and conclusions.

COMPETING INTERESTS

JDZ is a member of the InterMune Pharmaceuticals Clinical Advisory Board. DP has been a consultant to and/or member of the advisory boards for Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Medapharma, Merck, Mundipharma, Napp, Novartis, Nycomed, Pfizer, Sandoz and Teva. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: UK National Health Service, Aerocrine, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Novartis, Nycomed, Orion, Pfizer, Takeda and Teva. He has received payment for lectures from Activaero, Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Merck, Mundipharma, Napp, Novartis, Pfizer and Teva, and has been paid for development of educational materials by Boehringer Ingelheim and GlaxoSmithKline. He has been reimbursed for travel expenses by Boehringer Ingelheim, Merck, Mundipharma Napp, Novartis and Teva. He holds shares in AKL, which produces phytopharmaceuticals and owns 80% of Research in Real Life and its subsidiary social enterprise Optimum Patient Care.

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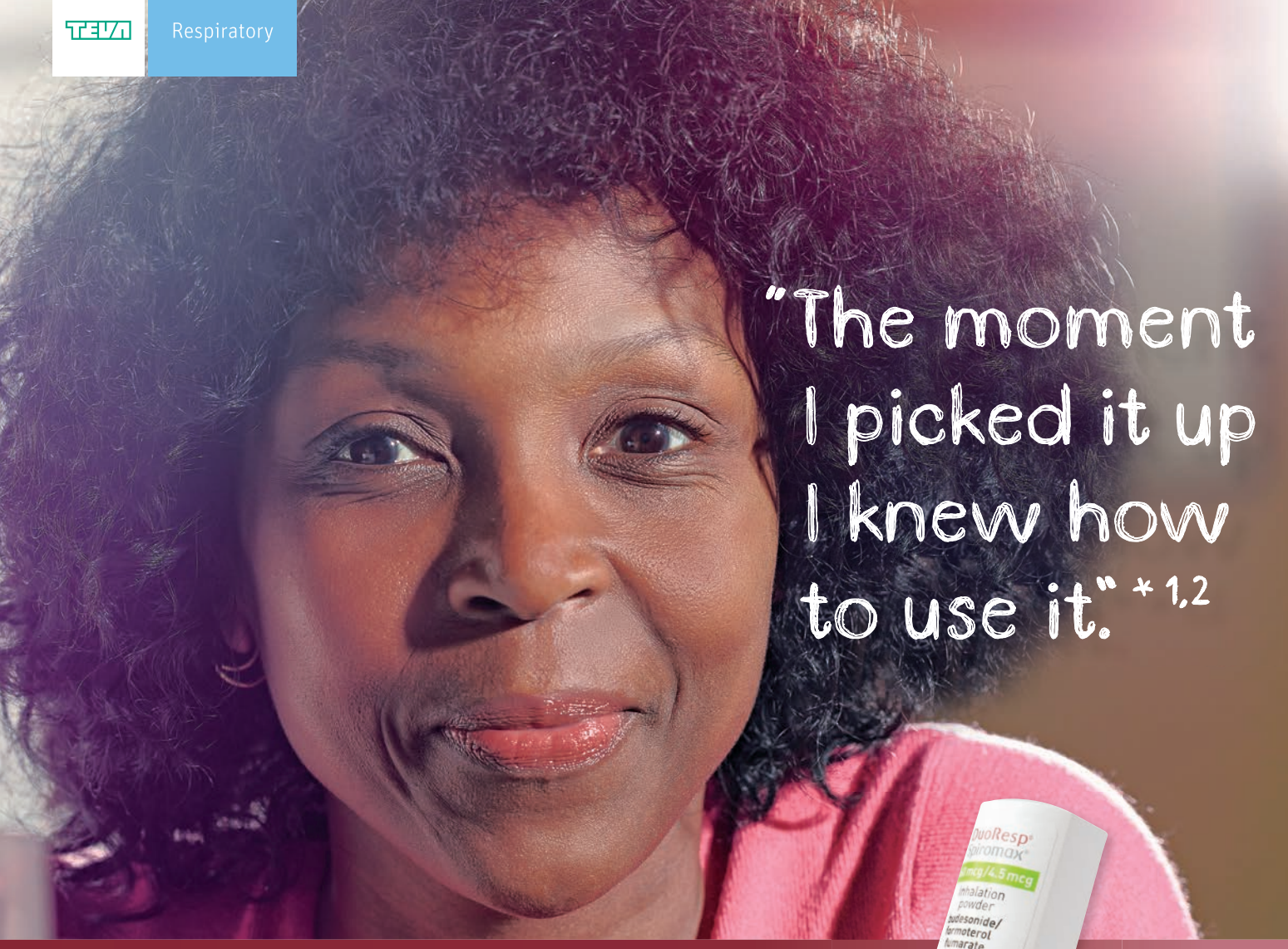

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Please refer to the Summary of Product Characteristics (SmPC) for full details of the Prescribing Information. DuoResp® Spiromax® (budesonide/formoterol) 160mcg/4.5mcg inhalation powder and DuoResp® Spiromax® (budesonide/formoterol) 320mcg/9mcg inhalation powder Abbreviated Prescribing Information. **Presentation:** *DuoResp® Spiromax® 160/4.5:* Each delivered dose contains 160mcg of budesonide and 4.5mcg of formoterol fumarate dihydrate. This is equivalent to a metered dose of 200mcg budesonide and 6mcg of formoterol fumarate dihydrate. *DuoResp® Spiromax® 320/9:* Each delivered dose contains 320mcg of budesonide and 9mcg of formoterol fumarate dihydrate. This is equivalent to a metered dose of 400mcg budesonide and 12mcg of formoterol fumarate dihydrate. Inhalation powder. **Indications:** ***Asthma:*** Treatment of asthma, where use of a combination (inhaled corticosteroid and long-acting β_2-adrenoceptor agonist) is appropriate. COPD: Symptomatic treatment of patients with severe COPD (FEV_1 <50% predicted normal) and a history of repeated exacerbations, who have significant symptoms despite regular therapy with long-acting bronchodilators. **Dosage and administration:** For use in adults ≥18 years. Not for use in children <18 years of age. ***Asthma:*** Not intended for the initial management. If an individual patient should require a combination of doses other than those available in the combination inhaler, appropriate doses of β_2-adrenoceptor agonists and/or corticosteroids by individual inhalers should be prescribed. The dose should be titrated to the lowest dose at which effective control of symptoms is maintained. When control of symptoms is achieved titrate to the lowest effective dose, which could include once daily dosing. *DuoResp® Spiromax® 160/4.5:* maintenance therapy – regular maintenance treatment with a separate reliever inhaler: *Adults:* 1-2 inhalations twice daily (maximum of 4 inhalations twice daily). DuoResp® Spiromax® maintenance and reliever therapy – regular maintenance treatment and as needed in response to symptoms: should be considered for patients with: (i) inadequate asthma control and in frequent need of reliever medication (ii) previous asthma exacerbations requiring medical intervention. *Adults:* The recommended maintenance dose is 2 inhalations per day, given either as one inhalation morning and evening or as 2 inhalations in either the morning or evening. For some patients a maintenance dose of 2 inhalations twice daily may be appropriate. Patients should take 1 additional inhalation as needed in response to symptoms. If symptoms persist after a few minutes, an additional inhalation should be taken. Not more than 6 inhalations should be taken on any single occasion. A total daily dose of up to 12 inhalations could be used for a limited period. Patients using more than 8 inhalations daily should be strongly recommended to seek medical advice. *DuoResp® Spiromax® 320/9:* Only to be used as maintenance therapy. *Adults:* 1 inhalation twice daily (maximum of 2 inhalations twice daily). ***COPD:*** *Adults:* 1 inhalation twice daily. *Elderly patients (≥65 years old):* No special requirements. *Patients with renal or hepatic impairment:* No data available. **Contraindications:** Hypersensitivity to the active substance or to any of the excipients. **Precautions and warnings:** If treatment is ineffective, or exceeds the highest recommended dose, medical attention must be sought. Patients with sudden and progressive deterioration in control of asthma or COPD should undergo urgent medical assessment. Patients should have their rescue inhaler available at all times. The reliever inhalations should be taken in response to symptoms and are not intended for regular prophylactic use e.g. before exercise. For such, a separate rapid-acting bronchodilator should be considered. Patients should not be initiated during an exacerbation. Serious asthma-related adverse events and exacerbations may occur. If asthma symptoms remain uncontrolled or worsen, patients should continue treatment and seek medical advice. If paradoxical bronchospasm occurs, treatment should be discontinued immediately. Paradoxical bronchospasm responds to a rapid-acting inhaled bronchodilator and should be treated straightaway. Systemic effects may occur, particularly at high doses prescribed for long periods. Potential effects on bone density should be considered, particularly in patients on high doses for prolonged periods that have co-existing risk factors for osteoporosis. Prolonged treatment with high doses of inhaled corticosteroids may result in clinically significant adrenal suppression. Additional systemic corticosteroid cover should be considered during periods of stress. Treatment should not be stopped abruptly. Transfer from oral steroid therapy to a budesonide/formoterol fumarate fixed-dose combination may result in the appearance of allergic or arthritic symptoms which will require treatment. In rare cases, tiredness, headache, nausea and vomiting can occur due to insufficient glucocorticosteroid effect and temporary increase in the dose of oral glucocorticosteroids may be necessary. To minimise risk of oropharyngeal Candida infection patients should rinse mouth with water. Administer with caution in patients with thyrotoxicosis, phaeochromocytoma, diabetes mellitus, untreated hypokalaemia, or severe cardiovascular disorders. The need for, and dose of inhaled corticosteroids should be re-evaluated in patients with active or quiescent pulmonary tuberculosis, fungal and viral infections in the airways. Additional blood glucose controls should be considered in diabetic patients. Hypokalaemia may occur at high doses. Particular caution is recommended in unstable or acute severe asthma. Serum potassium levels should be monitored in these patients. As with other lactose containing products the small amounts of milk proteins present may cause allergic reactions. **Interactions:** Concomitant treatment with potent CYP3A4 inhibitors should be avoided. If this is not possible the time interval between administration should be as long as possible. Not recommended with β-adrenergic blockers (including eye drops) unless compelling reasons. Concomitant treatment with quinidine, disopyramide, procainamide, phenothiazines, antihistamines (terfenadine), Monoamine Oxidase Inhibitors (MAOIs) and Tricyclic Antidepressants (TCAs) can prolong the QTc-interval and increase the risk of ventricular arrhythmias. L-Dopa, L-thyroxine, oxytocin and alcohol can impair cardiac tolerance. Concomitant treatment with MAOIs, including agents with similar properties, may precipitate hypertensive reactions. Patients receiving anaesthesia with halogenated hydrocarbons have an elevated risk of arrhythmias. Hypokalaemia may increase the disposition towards arrhythmias in patients taking digitalis glycosides. **Pregnancy and lactation:** Use only when benefits outweigh potential risks. Budesonide is excreted in breast milk; at therapeutic doses no effects on infants are anticipated. **Effects on ability to drive and use machines:** No or negligible influence. **Adverse reactions:** Since DuoResp® Spiromax® contains both budesonide and formoterol, the same pattern of adverse reactions as reported for these substances may occur. No increased incidence of adverse reactions has been seen following concurrent administration of the two compounds. *Serious:* Immediate and delayed hypersensitivity reactions, e.g. exanthema, urticaria, pruritus, dermatitis, angioedema and anaphylactic reaction, Cushing's syndrome, adrenal suppression, growth retardation, decrease in bone mineral density, hypokalaemia, hyperglycaemia, aggression, psychomotor hyperactivity, anxiety, sleep disorders, depression, behavioural changes, cataract and glaucoma, tachycardia, cardiac arrhythmias, e.g. atrial fibrillation, supraventricular tachycardia and extrasystoles, angina pectoris, prolongation of QTc-interval, variations in blood pressure, bronchospasm and paradoxical bronchospasm. *Common:* Candida infections in the oropharynx, headache, tremor, palpitations, mild irritation in the throat, coughing and hoarseness. Consult the Summary of Product Characteristics in relation to other side effects. **Overdose:** An overdose of formoterol may lead to: tremor, headache, palpitations. Symptoms reported from isolated cases are tachycardia, hyperglycaemia, hypokalaemia, prolonged QTc-interval, arrhythmia, nausea and vomiting. Supportive and symptomatic treatment may be indicated. **Price per pack:** *DuoResp® Spiromax® 160/4.5* and *DuoResp® Spiromax® 320/9:* £29.97. **Legal Category:** POM. **Marketing Authorisation Numbers:** *DuoResp® Spiromax® 160/4.5:* EU/1/14/920/001. *DuoResp® Spiromax® 320/9:* EU/1/14/920/004. **Marketing Authorisation Holder:** Teva Pharma BV, Computerweg 10, 3542 DR Utrecht, The Netherlands. **Date of Preparation:** May 2014. **Job Code:** UK/MED/14/0019. **References: 1.** Rychlik R, Kreimendahl F. Presented at the 7th IPCRG World Conference, 2014. **2.** Plusa T, Bijoś P. *Int Rev Allergol Clin Immunol Family Med,* 2015; 21(1): 21–24. **3.** DuoResp Spiromax® Summary of Product Characteristics.

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

*Instructions for use should be followed as per the patient information leaflet.
**DuoResp Spiromax® is licensed for use in adults 18 years of age and older only.

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