Volume 2
Issue 2
May/June 2015

Primary Care Respiratory **UPDATE**




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HIGHLIGHTS …

Striving for best respiratory care

Not to be sneezed at: allergic rhinitis

Journal round-up

Professional development: expanding your horizons, PCRS-UK national conference

Affiliated groups: a powerful tool for education and support

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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 AstraZeneca on 0800 783 0033.

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.

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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 GlaxoSmithKline on 0800 221 441.

References
1. Decramer *et al*. Lancet Resp Med 2014 ; Vol 2 No. 6 pp 472-4486.
2. Maleki-Yazdi *et al*. Respir Med. 2014;108(12):1752-1760.

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This corresponds to a metered dose of 400 micrograms of aclidinium bromide (equivalent to 343 micrograms of aclidinium) and a metered dose of 12 micrograms of formoterol fumarate dihydrate. **Indications:** Duaklir Genuair is indicated as a maintenance bronchodilator treatment to relieve symptoms in adult patients with chronic obstructive pulmonary disease (COPD). **Dose and administration:** The recommended dose is one inhalation of Duaklir Genuair 340 micrograms /12 micrograms twice daily. **Contraindications:** Hypersensitivity to the active substances or to the excipient lactose monohydrate. **Warnings and precautions:** Asthma: Duaklir Genuair should not be used in asthma; clinical studies of Duaklir Genuair in asthma have not been conducted. Paradoxical bronchospasm: In clinical studies, paradoxical bronchospasm was not observed with Duaklir Genuair at its recommended dose. However, paradoxical bronchospasm has been observed with other inhalation therapies. If this occurs, medicinal product should be stopped and other treatment will be considered. Not for acute use: Duaklir Genuair is not indicated for the treatment of acute episodes of bronchospasm. Cardiovascular effects: Patients with a myocardial infarction during the previous 6 months, unstable angina, newly diagnosed arrhythmia within the previous 3 months, QTc (Bazett's method) above 470 msec, or hospitalisation within the previous 12 months for heart failure functional classes III and IV as per the "New York Heart Association" were excluded from the clinical studies, therefore Duaklir Genuair should be used with caution in these patients groups. β_2-adrenergic agonists may produce increases in pulse rate and blood pressure, electrocardiogram (ECG) changes such as T wave flattening, ST segment depression and prolongation of the QTc-interval in some patients. In case such effects occur, treatment may need to be discontinued. Long-acting β_2-adrenergic agonists should be used with caution in patients with history of or known prolongation of the QTc-interval or treated with medicinal products affecting the QTc interval. Systemic effects: Duaklir Genuair should be used with caution in patients with severe cardiovascular disorders, convulsive disorders, thyrotoxicosis and phaeochromocytoma. Metabolic effects of hyperglycaemia and hypokalaemia may be observed with high doses of β_2-adrenergic agonists. In Phase III clinical studies, the frequency of notable increases in blood glucose with Duaklir Genuair was low (0.1%) and similar to placebo. Hypokalaemia is usually transient, not requiring supplementation. In patients with severe COPD, hypokalaemia may be potentiated by hypoxia and concomitant treatment (see section 4.5). Hypokalaemia increases susceptibility to cardiac arrhythmias. Due to its anticholinergic activity, Duaklir Genuair should be used with caution in patients with symptomatic prostatic hyperplasia, urinary retention or narrow-angle glaucoma (even though direct contact of the product with the eyes is very unlikely). Dry mouth, which has been observed with anticholinergic treatment, may in the long term be associated with dental caries. Excipients: Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine. **Interactions:** COPD medicinal products: Co-administration of Duaklir Genuair with other anticholinergic and/or long-acting β_2-adrenergic agonist containing medicinal products has not been studied and is not recommended. Although no formal *in vivo* drug interaction studies have been performed with Duaklir Genuair, it has been used concomitantly with other COPD medicinal products including short-acting β_2-adrenergic bronchodilators, methylxanthines, and oral and inhaled steroids without clinical evidence of drug interactions. Metabolic interactions: *In vitro* studies have shown that aclidinium or its metabolites at the therapeutic dose are not expected to cause interactions with P-glycoprotein (P-gp) substrate drugs or drugs metabolised by cytochrome P450 (CYP450) enzymes and esterases. Formoterol does not inhibit the CYP450 enzymes at therapeutically relevant concentrations. Hypokalaemic treatment: Concomitant treatment with methylxanthine derivatives, steroids, or non-potassium-sparing diuretics may potentiate the possible hypokalaemic effect of β_2-adrenergic agonists, therefore caution is advised in their concomitant use. β-adrenergic blockers: β-adrenergic blockers may weaken or antagonise the effect of β_2-adrenergic agonists. If β-adrenergic blockers are required (including eye drops), cardioselective beta-adrenergic blockers are preferred, although they should also be administered with caution. Other pharmacodynamic interactions: Duaklir Genuair should be administered with caution to patients being treated with medicinal products known to prolong the QTc interval such as monoamine oxidase inhibitors, tricyclic antidepressants, antihistamines or macrolides because the action of formoterol, a component of Duaklir Genuair, on the cardiovascular system may be potentiated by these medicinal products. Medicinal products that are known to prolong the QTc interval are associated with an increased risk of ventricular arrhythmias. **Fertility, pregnancy, and lactation:** Pregnancy: There are no data available on the use of Duaklir Genuair in pregnant women. Studies in animals have shown fetotoxicity only at dose levels much higher than the maximum human exposure to aclidinium and adverse effects in reproduction studies with formoterol at very high systemic exposure levels. Duaklir Genuair should only be used during pregnancy if the expected benefits outweigh the potential risks. Breast-feeding: It is unknown whether aclidinium (and/or its metabolites) or formoterol are excreted in human milk. As studies in rats have shown excretion of small amounts of aclidinium (and/or its metabolites) and formoterol into milk, the use of Duaklir Genuair by breast-feeding women should only be considered if the expected benefit to the woman is greater than any possible risk to the infant. Fertility: Studies in rats have shown slight reductions in fertility only at dose levels much higher than the maximum human exposure to aclidinium and formoterol. Nevertheless, it is considered unlikely that Duaklir Genuair administered at the recommended dose will affect fertility in humans. **Effects on ability to drive and use of machines:** Duaklir Genuair has no or negligible influence on the ability to drive and use machines. The occurrence of blurred vision or dizziness may influence the ability to drive or to use machines. **Undesirable effects:** The presentation of the safety profile is based on the experience with Duaklir Genuair and the individual components. The safety experience with Duaklir Genuair comprised exposure at the recommended therapeutic dose for up to 12 months. Adverse reactions associated with Duaklir Genuair were similar to those of the individual components. As Duaklir Genuair contains aclidinium and formoterol, the type and severity of adverse reactions associated with each of the components may be expected with Duaklir Genuair. The most frequently reported adverse reactions with Duaklir Genuair were nasopharyngitis (7.9%) and headache (6.8%). Common (≥1/100 to <1/10) undesirable effects included Nasopharyngitis, Urinary tract infection, Sinusitis, Tooth abscess, Insomnia, Anxiety, Headache, Dizziness, Tremor, Cough, Diarrhoea, Nausea, Dry mouth, Myalgia, Muscle spasms, Oedema peripheral, Blood creatine phosphokinase increased. Uncommon (≥1/1,000 to <1/100) undesirable effects included Hypokalaemia, Hyperglycaemia, Agitation, Dysgeusia, Blurred vision, Tachycardia Electrocardiogram QTc prolonged, Palpitations, Dysphonia, Throat irritation, Rash, Pruritus, Urinary retention, Blood pressure increased; rare (≥1/10,000 to <1/1,000) undesirable effects included Hypersensitivity, Bronchospasm, including paradoxical; not known undesirable effect included Angioedema. **Pack sizes:** Carton containing 1 inhaler with 60 doses. Carton containing 3 inhalers each with 60 doses. Not all pack sizes may be marketed. **Marketing Authorisation Holder:** Almirall, S.A. Ronda General Mitre, 151, 08022 Barcelona, Spain. **Date of last revision:** December 2014.

References: 1. Duaklir® Genuair® Summary of Product Characteristics. Barcelona, Spain: Almirall, S.A. 2014. **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.

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CONTENTS

Primary Care Respiratory **UPDATE**




SPECIAL FEATURES

Editor's Round-Up
Hilary Pinnock 7

Chair's perspective: Why it is important that we continually strive to provide the best respiratory care for our patients
Stephen Gaduzo 8

Expand your horizons at the premier respiratory conference for primary care
Francesca Robinson 11

REGULAR FEATURES

Policy Round-Up
Bronwen Thompson 14

Getting the Basics Right
Allergic rhinitis: A common problem, not to be sneezed at!
Stephanie Wolfe 16

Journal Round-Up 21

PCRS-UK News Round-Up 28

Delivering Excellence Locally

Practice Nurse is inspired to improve asthma care after reading NRAD report
Francesca Robinson, Sarah Anderson 31

Improvement Tools
National Review of Asthma Deaths – Have you taken appropriate steps to protecting your patients with asthma?
Iain Small 32

NHS Medway and Swale CCG using Stepping Down Triple Therapy Practice Improvement Worksheet
Tricia Bryant 33

Regional Leaders Workshops offer support and inspiration
Francesca Robinson, Deirdre Siddaway, Carla Astles 35

PCRS-UK Affiliated Groups - A powerful tool for education and professional development, camaraderie and local support
Carol Stonham, Tricia Bryant 36

Update your clinical practice: Practical approach to managing exercise-induced asthma in children and adults 40

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Editor's Round-up

Hilary Pinnock, *Editor*

A few days ago, I re-read the original British Thoracic Society Asthma Guidelines published 25 years ago in the *British Medical Journal* (*BMJ*). This ground-breaking document was three pages long, and only cited three references, one of which was a confidential enquiry into asthma deaths that had clearly provided the motivation for the guideline committee. The 2014 BTS/SIGN Asthma Guideline is 192 pages long and contains 899 references: but we are again in the shadow of a national enquiry into asthma deaths.

Stephen Gaduzo challenges us to account for the actions we have taken in the year since the National Review of Asthma Deaths highlighted the deficiencies in care that contributed to many of the asthma deaths. Read his perspective on page 8 and consider your answer to the challenge. See page 31 to see what others around the UK are doing – and to find the link to the PCRS-UK survey where you can tell us about your initiative.

We are all familiar with the importance, highlighted by NRAD, of noticing (and acting on) overuse of bronchodilators. Patel *et al* in a paper in the *npj Primary Care Respiratory Medicine* (see summary on page 21) observed that patients step up their beta$_2$ agonist inhaler use in the days before a hospital admission – but 90% do not seek medical advice. Asthma disasters waiting to happen....

Fran Robinson outlines some of the key attractions of this year's conference, and reminds us why, for many of us, the PCRS-UK conference is the 'must attend' event of the year. Whether you want to brush up on the basics, or expand your horizons with stimulating keynote speakers this is the meeting for you! One other reason for attending the conference is to keep up to date. Bronwen Thomson reminds us about new guidelines in the pipeline, and suggests some on-line resources that can help us assess the increasing number of new respiratory drugs.

With the summer weather the annual 'epidemic' of hay fever has probably already started to fill up your surgery. Steph Wolfe explains how we can deal with this troublesome condition proactively, preventing much of the misery that ruins early summer for 1 in 5 of our patients. 'Think about it at Christmas' is Steph's advice – and build it into your patients' asthma action plans.

With the usual eclectic mix of papers (thanks to Basil Penney for his work on the summaries) you can ponder the role of primary care in the follow-up of patients with obstructive sleep apnoea, remind yourself of the importance of referring people with COPD to pulmonary rehabilitation, and contemplate the suggestion that grandmother's smoking habits when pregnant with the mother increase the risk of asthma in the grandchild.

Happy reading!

Chair's perspective: Why it is important that we continually strive to provide the best respiratory care for our patients

Stephen Gaduzo, *PCRS-UK Executive Chair*

As I write this we are approaching the first anniversary of the National Review of Asthma Deaths (NRAD), which highlighted deficiencies in routine asthma care that contributed to avoidable deaths and challenged us to consider whether we had become complacent about the asthma care we provide.

There were messages for everyone in that report. One year on, we should all be asking ourselves: Where are we now with asthma care in our practices? Have we read the report and have we made any changes to improve our asthma care? Has our Clinical Commissioning Group (CCG) or Health Board put a plan in place to implement some or all of the NRAD recommendations?

What was positive for me about NRAD was that the recommendations chimed very well with quality improvements that PCRS-UK has been championing for many years.

For example, NRAD recommended that every GP practice should have a designated, named clinician, leading asthma services. PCRS-UK through "Delivering Excellence Locally" advocates that each practice should have a respiratory lead GP and/or nurse to support the implementation of guidelines and quality standards. If you're reading *Primary Care Respiratory Update* then that lead is probably you. How well are you doing at getting the rest of your practice on board? Our respiratory leaders programme helps develop the skills and knowledge required to influence at the next level across a CCG or Health Board.

PCRS-UK is here to support you. Our website contains a wealth of resources to help you get the basics right and to implement the NRAD recommendations (for example, see our new practice improvement worksheet at http://www.pcrs-uk.org/resource/improvement-tools/NRAD).

NRAD recommended better education for nurses and doctors to make them aware of the risks of poor asthma control. PCRS-UK is acutely aware that many nurses are expected to take on responsibility for the routine management of asthma without the appropriate training - if this happens in your practice, check out our nurse skills document (see http://www.pcrs-uk.org/resource/professional-development/nurse-skills-document); it can be used to evaluate learning/training requirements and used as evidence when discussing learning and skills training needs with your practice.

Making a correct diagnosis of asthma is the first stage in good asthma care and in July we are expecting NICE to publish its final guidance on asthma diagnosis and monitoring. Their draft guidance caused a stir in the respiratory community in January when it suggested almost a third of people are incorrectly diagnosed with asthma and may therefore be on inhalers they don't need. The draft guidance also recommended that both spirometry and Fractional exhaled nitric oxide (FeNO) tests should be used routinely to diagnose asthma.

I am sure we all agree that every effort should be made to ensure that an asthma diagnosis is made as firmly and accurately as possible. There would, however, be enormous hurdles to overcome to implement such recommendations not only with respect to buying the equipment for primary care but also with training people to use it, the time to perform the tests and the cost of delivering the service.

Lack of time and resources are the pressing challenges currently facing primary care. At a recent joint PCRS-UK Executive and Trustees strategy day we discussed how we all have more patients to see and that many of these patients have multi-morbidities and complex needs. We all have more paper-

work to do, our surgeries are required to stay open for longer, demand for our services increases relentlessly yet staff are becoming harder to recruit. This leaves the rest of us facing increased stress and pressure.

For this reason, I am looking forward more than ever this year to the PCRS-UK annual conference in October. This is an opportunity to take time out to focus on what is really important – doing the best for our patients and putting them at the centre of everything we do. The Conference enables us to re-energise ourselves and remind ourselves why we went into a medical or nursing career. We can hear about the latest developments in respiratory medicine, discover what is new in the research field and be inspired by experts at the top of their game. It is also a chance meet with enthusiastic fellow respiratory colleagues, to share our experiences (both challenges and exciting), but also to enjoy ourselves.

Nurses: revalidation is just around the corner and attending the conference will earn you valuable CPD points. This year, by popular request, we are putting on some 'Back to Basics' workshops designed for those who want to refresh their practical skills.

There will be something for everyone in the conference programme and I guarantee that if you come you will return to your practice, refreshed and inspired with ideas that will enable you to make a difference to your patients. I look forward to seeing you there.

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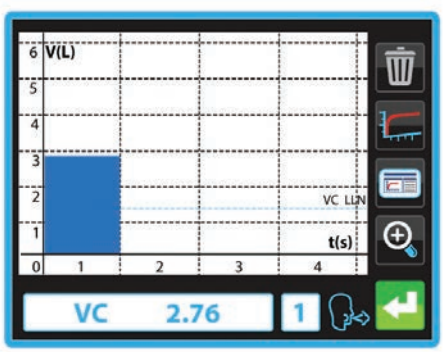

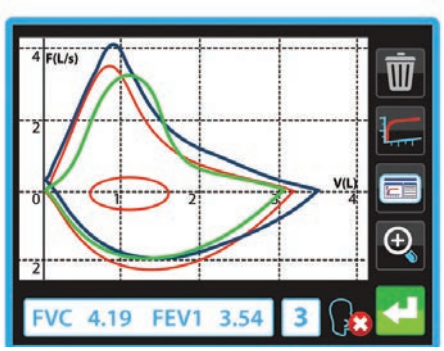

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Expand your horizons at the premier respiratory conference for primary care

Fran Robinson reports on the forthcoming conference and talks to some of the keynote speakers

Francesca Robinson, *PCRS-UK Communications Consultant*

The 2015 PCRS-UK national primary care respiratory conference returns in October, aimed this year at primary care respiratory clinicians with ambitions to expand their horizons and deliver high value patient centred care.

Presentations will focus on a holistic, whole systems approach which breaks down traditional boundaries to ensure patients are placed at the centre of care. Renowned for its friendly and informal atmosphere, the conference is a great opportunity to network with like-minded colleagues, and share new ideas.

The programme has been carefully designed to ensure there is something for everyone from the expert GP interested in the latest leading edge practice to the practice nurse new to respiratory care who wants to boost their practical skills.

"Each year we base the topics on feedback from delegates who attended the previous conference. We listen very carefully to their comments," says Sandy Walmsley, a nurse and Co-chair of the Conference Organising Committee. "This year we would particularly like to see some new delegates. In particular we hope nurses will come along to gain valuable points for revalidation which starts just a couple of months after the conference."

The programme consists of:

- Expanding the horizons of clinical practice: patient-centred clinical updates from experts
- Transforming services for quality and value: which will address key service delivery and commissioning issues. This section, which is aimed at commissioners and people involved in setting up services, discusses how to bring about change in practice.
- Cutting edge research sessions: Including posters and oral presentations, this section runs in conjunction with PCRS-UK's highly successful flagship journal *npj Primary Care Respiratory Medicine*.
- Back to Basics: This is a series of practical and interactive workshops, run in conjunction with our educational partner, Education for Health and is designed to refresh key clinical skills.

The main programme will be complemented by four innovative satellite sessions from sponsors AstraZeneca, GSK, Pfizer and Boehringer Ingelheim.

For 2015 the conference organisers have come up with some novel ideas to keep the programme fresh. There will be a session on interstitial lung disease (ILD). Although this is a condition predominantly managed in secondary care it is becoming more common, so we will be seeing more patients with ILD in primary care. This session will enable clinicians to learn how to spot the early signs, when to suspect the diagnosis, how the condition can be managed and what the challenges are for primary care. A patient will tell delegates how the disease impacts on them.

The patient perspective will be provided by conference partners Asthma UK and the British Lung Foundation whose Chief Executives Kay Boycott and Penny Woods, respectively, are each chairing a session.

For some light relief at the end of day one there will be a Respiratory Mastermind Quiz with four experts in the spotlight facing a grilling on each of their special subjects - allergy, bronchiectasis, dysfunctional breathing and tuberculosis.

> *"This conference is for primary care people by primary care people and that's what is great about it. It is answering my questions about implementing change in a practical way, backed by research"*
>
> **Practice nurse respiratory lead, Cornwall.**

Also there will be some fun for the whole practice team in the closing plenary where a consultant, a GP, a specialist respiratory nurse and a practice nurse will discuss different patient scenarios and the ways they would approach their management.

Back to Basics

This year another new component will be an entire stream devoted to Back to Basics practical workshops run by experienced trainers from Education for Health. The topics will include spirometry, making a good diagnosis, conducting an effective respiratory review, effective self-management and inhaler technique.

Anne Rodman, Independent Advanced Respiratory Nurse Practitioner and Education for Health regional trainer, who is the Back to Basics session lead for the Conference Organising Committee, says: "These sessions will be aimed at people who are new to the conference and also those attendees who would like to refresh their core skills. Numbers will be limited to enable the sessions to be as interactive as possible.

"We recognise that in primary care there is very little opportunity to get hands-on practical skills training. It's often very much a case of 'see one, do one, teach one' - and you may be concerned that you have not fully understood the skills or things might have changed since you are shown how to do something.

"Our aim to make the conference a great opportunity for people to brush up on core skills and to feel much more competent and confident when they go back to their practices."

Cognitive behavioural therapy

On the theme of the relationship between mind and body, Karen Heslop, Nurse Consultant (chest clinic) at Newcastle Hospital Trust and Respiratory NIHR (National Institute for Health Research) Clinical Academic Fellow, will be giving a presentation setting out the psychological difficulties faced by people with respiratory diseases and in particular those with COPD. She will explain how the psychological burden of COPD can impact on a person and how cognitive behavioural therapy (CBT) can help.

Karen, who runs a three day CBT course, says there are many cognitive and behavioural techniques that nurses could use that could transform patients' lives.

> *"There is a friendly atmosphere at this conference and the presentations have been well delivered"*
>
> **GP Respiratory Clinical Lead, Midlands Region**

"Traditionally this kind of service has always been provided by mental health practitioners but this is an ideal skill for a respiratory nurse or practice nurse to gain because they are ideally placed to identify whether someone has got respiratory failure and is not well physically or whether they are having a panic attack. If it is a panic attack they could use CBT techniques to help the patient manage the panic."

Karen will also tell delegates about the trial which she has been conducting evaluating the use of CBT in 279 patients with COPD. This is the biggest study to date of CBT for people with COPD. People randomised to the intervention group had one-to-one CBT sessions with the nurse, and those in the control group were given self-help leaflets.

The impact of mental health and wellbeing and vice versa

Professor Iona Heath, Immediate Past President of the Royal College of General Practitioners, will be giving a presentation on the impact of mental health on physical wellbeing.

"I will be talking about the fact that you can't separate mind and body – you can't have a physical illness that doesn't affect you mentally, we are one body."

"For lung diseases this can relate to the overlap with panic. Any sense of trying to separate the two is hopeless and we really need to pay much more attention to that."

"Another example in respiratory disease is where steroids can cause psychotic breakdown. I once had a patient who had a major psychotic breakdown every time she had to have a crash course of steroids to get over asthma. It's the effect steroids sometimes have on some vulnerable people. So that sort of overlap can also be very tricky."

"Heroin addiction and asthma is another terrible combination because heroin is a respiratory suppressant and wheezing can be much worse than you realise when you're high. It is an area that needs particular attention because there is no research on these dual morbidities."

"Primary care respiratory clinicians are trained to deal with people with multiple conditions but there is a lot for them to think about. We know that you can do some preparatory work with people if you treat them with respect and dignity so it becomes incredibly important to treat the most vulnerable people with the dignity they deserve."

Iona's presentation will be followed by a look at the impact of respiratory health on mental wellbeing by Thys van Molen, Professor of Primary Care Respiratory Medicine from the University Medical Centre, Groningen, The Netherlands.

Mastermind

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Dr Dermot Ryan, Honorary Clinical Research Fellow at the University of Edinburgh and Chair of the Primary Care Interest Group of the European Academy of Allergy and Clinical Immunology and who has over 60 publications to his name, will be valiantly pitting his wits against three other expert panellists in the Respiratory Mastermind Game.

A former PCRS-UK chair (twice) and committee member for 15 years, a key figure in establishing the journal *npj Primary Care Respiratory Medicine* and who established the chair of primary care respiratory medicine in Aberdeen in 2001, Dermot will be answering questions on his specialist subject: allergy.

"I'm hoping that my answers will help delegates to realise what an important role allergy has to play in respiratory disease and how little they probably know about it and how the needs of our patients are largely not being met. This is not their fault, it is because there is a paucity of training at undergraduate and postgraduate level.

Clinicians really need to understand what an allergic reaction is and how it presents, the timescales involved and what might differentiate it from non-allergic disease.

A quarter of the population for example suffer from some form of allergic rhinitis. Although it rarely kills anybody, it causes a lot of misery and has a big economic impact on the individual and for employers as days are lost from work or people are not as productive as they might otherwise be. It's not a small problem."

Little wheezers

Dr Vincent McGovern, GP and Clinical Assistant in Paediatric Asthma at the Children's Hospital, Belfast, will be sharing his expertise in diagnosing and managing "little wheezers".

"The problem of correct and appropriate diagnosis and treatment of preschool children with wheezing disease remains a diagnostic difficulty for most doctors and nurses. The guidelines are often unhelpful in advising clinicians how to manage this condition. There is no specific test that will confirm the diagnosis so it has to involve trials of treatment and watching carefully for the response.

"My session will offer pragmatic advice as to how these children should be managed and correctly diagnosed. Come to my session and you'll be the expert at the end of it," he promises.

The conference highlights

Anne Rodman, says there are many high points of this annual event but she says networking with other people and sharing innovation makes the conference an uplifting experience for her. "You go away feeling that actually you can change things and that the challenges are not quite the mountain you previously thought they were."

"You will always learn something new", says Dr Dermot Ryan. "Ten per cent of the UK population suffer from a chronic respiratory disorder which can be treated in primary care. If you don't have a sound knowledge of basic respiratory medicine you can't possibly do the best for your patients."

> *"This conference always makes you think. It's very valuable and I always learn a lot from it"*
>
> **Practice nurse, Uckfield, Sussex**

Sandy Walmsley relates: "What has made me really proud as a conference organiser is that last year a group of nurses from Solihull attended for the first time. They had a ball! They were the last ones to bed and really embraced everything the conference had to offer. Now they have got a really active nurse group set up as a result of coming to this conference.

"What makes all the work of organising the conference so worthwhile for me is seeing people like this become really enthusiastic about respiratory medicine and to hear them talking about how they can improve patient care."

Ten reasons why you should come to the conference:

- You will expand your horizons – you will hear about the latest developments from experts in their field.
- The conference is an opportunity to update your knowledge and skills.
- You will learn what high value patient centred care looks like and why a more holistic approach to care is important.
- You will understand better the relationship between mental and physical health.
- You can make the most of the networking opportunities with like-minded colleagues and make some new friends
- It will be an opportunity to take a break from the stresses of general practice, relax and have some fun while refreshing your expertise in respiratory medicine.
- You will earn Continuing Professional Development CPD points for revalidation.
- There will be a chance for everyone to learn something new: from the clinician new to respiratory care who wants to learn or brush up their skills in our practical workshops to the commissioner or healthcare manager who wants to influence services and is looking for tips on how to embed change in practice.
- The conference is great value for money. Registration fees start from just £149 for nurses and £199 for GPs who are PCRS-UK members, inclusive of the conference dinner and lunches. You can register at: https://www.pcrs-uk.org/pcrs-uk-annual-conference.
- Enjoy the comfortable, modern, purpose built facilities at Whittlebury Hall Conference and Training Centre and Hotel which offers award winning food and free Wi-Fi. Situated in rural Northamptonshire, it is easily accessible by road from the motorway network or by direct train services from London.

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

Asthma guidelines – confused?

You will already be aware that the latest update of British Thoracic Society/Scottish Intercollegiate Guideline Network (BTS/SIGN) British Asthma Guideline (http://www.sign.ac.uk/pdf/SIGN141.pdf) is now available – with updated sections on supported self management, and organisation and delivery of care, as well as non-pharmacological treatment. There is also a new section on key recommendations for implementation across the guideline – and these are linked to the statements in the National Institute for Health and Clinical Excellence (NICE) quality standard for asthma where appropriate.

NICE is now joining the scene on developing guidelines for asthma. A guideline on diagnosing and monitoring asthma is expected in July 2015. When we asked for your views on the draft guideline in an online survey, we had an overwhelming response – almost 100 of you replied. Many of you expressed concern about the huge discrepancies between what BTS/SIGN recommends and what NICE was proposing, and what a challenge it will be to implement in routine primary care, due to the scale of change from current practice. We have shared these concerns with NICE and have stressed that it could be confusing to have asthma guidelines from two different sources.

NICE is starting work on a separate guideline for asthma management that will be published in June 2017. We shall keep you posted on developments here as they are still finalising the scope of this guideline. And for those who like to keep an eye on international guidelines, the GINA asthma guideline (http://www.ginasthma.org/local/uploads/files/GINA_Report_2015.pdf) has just been updated (April 2015) based on the most recent evidence. Some feel that the GINA guideline is more relevant to asthma management in primary care than other guidelines – take a look and see what you think.

Other asthma-related activity in brief .....

- It has just been announced that asthma is to be added to the national programme of clinical audits. We look forward to supporting Asthma UK who is leading the bid as the audit is developed and commissioned.
- The East of England Strategic Clinical Network is hosting the National Paediatric Asthma Collaborative (http://www.respiratoryfutures.org.uk/programmes/national-paediatric-asthma-collaborative/), which aims to facilitate a co-ordinated approach to implementing improvements in care for children and young people with asthma. Building on the work on NRAD and other evidence, they are developing tools and resources to help improve outcomes in the management of asthma in children.

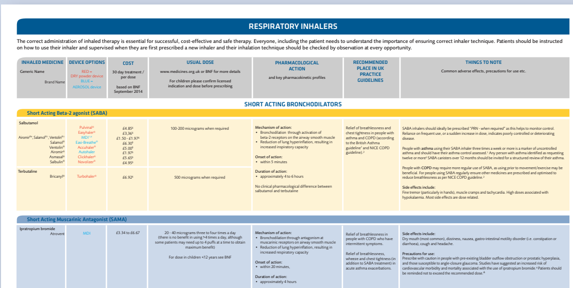
New respiratory products – where can I get information about them?

Do you want to know what the evidence is for all these new products coming onto the market, on which NICE has not yet done a formal technology appraisal? There are three main sources for such information.

- NICE undertakes 'Evidence summaries: new medicines' (ESNMs) - http://www.nice.org.uk/about/what-we-do/our-programmes/nice-advice/evidence-summaries-new-medicines - on a wide range of new medicines. Although an ESNM does not constitute formal NICE guidance, the strengths and weaknesses of the relevant evidence are critically reviewed within each ESNM for new indications, new formulations and new compounds. In the respiratory field, there are ESNMs for fluticasone furoate plus vilanterol, Ultibro Breezhaler, Spiriva Respimat, Anoro Ellipta, Relvar Ellipta, Fostair, Fostair NEXThaler, olodaterol, Incruse. To find these, just use the search function within the NICE website.
- Many of these have also been reviewed by the Scottish Medicines Consortium (SMC) - https://www.scottishmedicines.org.uk/SMC_Advice/Advice_Directory/SMC_Advice_Directory - which considers all new products and formulations. In contrast to ESNMs from NICE, they issue guidance that a product is accepted, accepted for restricted use only, or not recommended, and they expect the guidance to be followed throughout Scotland.
- UK Medicines information (UKMi) produces a monthly bulletin (http://www.ukmi.nhs.uk/filestore/ukmianp/NewProductEvaluationsMarch15.pdf) summarising information sources on new products and is a useful quick reference point for new compounds which indicates whether NICE and SMC have reviewed them.

Don't forget!

PCRS-UK produced a useful table of inhaled respiratory treatments in December 2014 which includes most of the recently launched products – with a summary of where they fit into current UK guidelines, dosage, mode of action, cost and device (https://www.pcrs-uk.org/system/files/Resources/Guidelines-and-guidance/RespInhalerTable_FINAL.pdf)



National Inhaler Group sets out to improve the benefits patients and the NHS get from inhalers

This group is a coalition of not-for-profit organisations and professional societies with a common interest in promoting the correct use of inhaled therapies to improve the outcomes of patients with respiratory conditions. All the major respiratory stakeholder groups are represented – including PCRS-UK, and they have a busy work programme ahead. Their activities include:

- promoting simple, consistent, standardised education and training of health care professionals and others such as school teachers
- collating information about available training
- exploring the best methods to support patients and carers to derive maximum value from their inhalers
- lobbying for measures to be put in place to ensure that patients are dispensed the inhalers they have been prescribed and taught how to use, and that the blue=reliever colour convention is preserved

They are interested to hear about any local initiatives that are aiming to improve the benefit patients get from their inhalers. To keep track of their progress, check into the National Inhaler Group pages on the Respiratory Futures website (http://www.respiratoryfutures.org.uk/programmes/national-inhaler-group/) .

New models of care and integrated working

The Five Year Forward View has generated a lot of discussion and energy in England about new ways of working in order that patients receive a seamless service, where their clinicians are communicating with each other and providing coordinated care in line with an agreed care plan. There are now 29 vanguard sites which will be piloting these new models of care – selected from 260 NHS organisations who expressed an interest. Check out whether there are any near you (http://www.england.nhs.uk/ourwork/futurenhs/5yfv-ch3/new-care-models/).

Following some exploratory work on what integrated care means in the context of respiratory disease, the BTS has set up the BTS Integrated Care Working Party with a broad membership, chaired by Professor Martyn Partridge. The main aim of the group is to ensure that those with a special interest and responsibility for integrated respiratory health care are equipped with the correct skills, training, support and facilities, and that such developments are correctly evaluated. There is primary care representation on the group, which is developing a range of tools (https://www.brit-thoracic.org.uk/delivery-of-respiratory-care/integrated-care/) available on the BTS website. These include a job specification for a Consultant in integrated respiratory care, narrative from individuals already adopting an integrated approach to respiratory disease management, and a description of how integration can work locally.

Scotland is integrating!

As of April 9, the Health Boards and Local Authorities in Scotland are pooling resources and integrating their services, so that health and social care will operate as an integrated function. At a local level, they are now able to choose from two models of integration. People with long-term conditions are one of the groups expected to benefit most from seamless care.

National COPD audit – primary care data collection – an update

There has been a delay in progressing the primary care element of the National COPD Audit. We now have a provisional timing of June/July when practices will be contacted so that they can sign up to take part in the audit and receive feedback on how they are doing. Data collection will be completely automatic with no work for the practice. We will keep you posted.

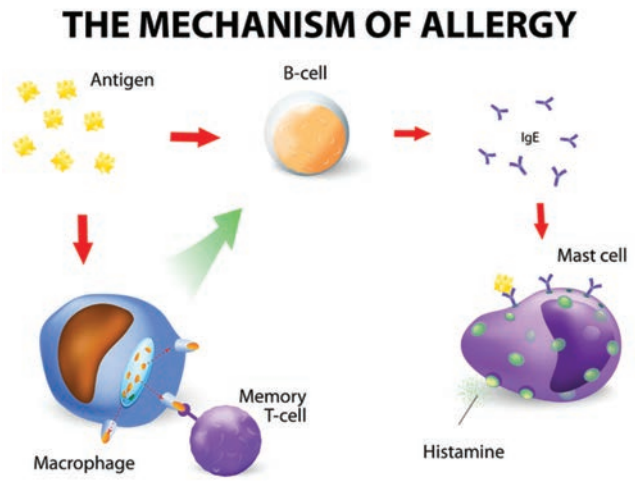
Getting the Basics Right

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

Stephanie Wolfe, *Respiratory Nurse Specialist & Trainer, Norwich*

There are various forms of rhinitis, which is defined as inflammation of the nasal mucosa and can be due to various causes such as an allergen, infection, vaso-motor abnormality (caused by an irritant). The condition may also involve the sinuses and is known as rhino-sinusitis.

Allergic rhinitis is caused by inhalation of allergens such as pollen, dust, or animal dander that trigger an abnormal IgE reaction in the nose of susceptible people, especially those with asthma or a family history of atopy.



It is more common in children and younger adults. The pathophysiology of allergic rhinitis is very similar to that seen in asthma or eczema. Release of mediators from cells causes the inflammation and symptoms experienced by the individual.

Allergic rhinitis is a common problem in the UK, affecting approximately 20% of the population, with 80% of people with asthma having nasal symptoms as well as asthma.[1] Patients may also have symptoms of allergic conjunctivitis and/or eczema. Despite being the root cause of a high level of morbidity and health care costs[2] allergic rhinitis is often seen by patients and health care professionals as trivial, which it is not.

Allergic rhinitis may be seasonal, perennial or both. The classical seasonal rhinitis, known as hay fever, is widely recognised, occurring in the summer months, triggered by grass pollens, and causing streaming eyes (allergic conjunctivitis) sneezing, itchy nose/palate and runny or blocked and snuffly nose. However, seasonal rhinitis may occur in any season e.g Autumn, when it may be due to spores from moulds. Symptoms may start as early as January and February when the trees start to produce their pollen. Chart 1 illustrates the year round pollen triggers; others triggers include house dust mite (HDM), animal dander, hobbies or occupational allergens.

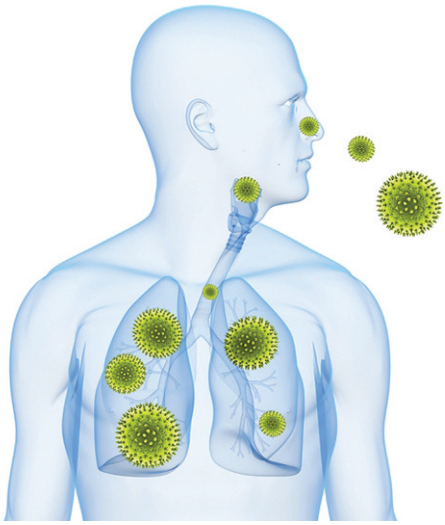
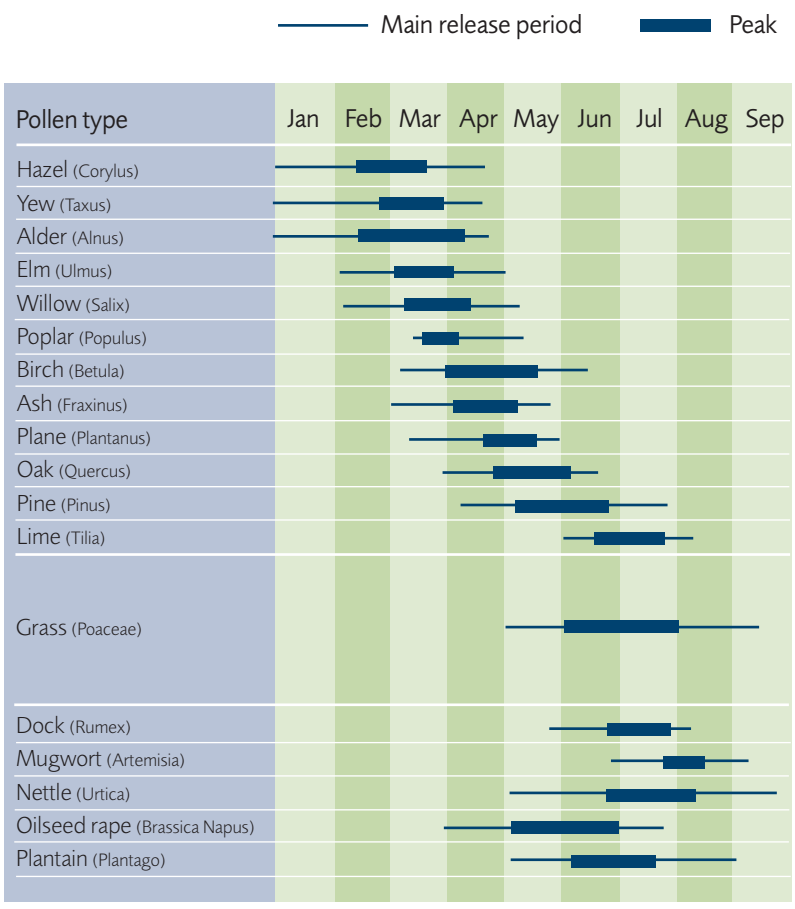


Chart 1. Pollen calendar



Adapted from the Met Office pollen chart http://www.metoffice.gov.uk

For free pollen forecast visit www.metoffice.gov.uk/public/weather/forecast/?tab=map&map=Pollen

Symptoms of allergic rhinitis could be any or all of the following:

- Sneezing
- Nasal discharge which is usually clear and runny or
- Nasal blockage/stuffy, usually bilateral
- Post nasal drip
- Itchy Palate
- General debility (headaches, tiredness)

Symptoms are bilateral, further investigation and possible referral may be needed if symptoms are persistently unilateral, as this could be a sign of blockage caused by polyps or more seriously, a carcinoma.

Diagnosis of allergic rhinitis

The diagnosis of allergic rhinitis starts with simply asking questions about any nasal symptoms. An ideal opportunity to do this is during an asthma review. Asthma templates should include read codes relating to rhinitis to prompt the clinician to ask about any symptoms.

The ARIA Guidelines classify allergic rhinitis as intermittent or persistent, and mild, moderate or severe, depending on symptoms and their frequency.[3] Although the mechanism is not quite clear, poorly treated rhinitis is linked with sub optimal control of asthma.[2,3] It is thought this may be due to mediator release triggering both rhinitis and asthma or direct trickling of inflammatory products into the lower respiratory system.

Allergic rhinitis may be triggered by a person's occupation and therefore questions about occupational history and when symptoms occur are important.[4] The rhinitis may precede asthma by several years; so removal from exposure to the allergen is essential to stop this "allergic march".

Allergic rhinitis is mainly diagnosed on clinical history, supported by nasal examination and in some cases, allergy testing (although availability of this in primary care is variable). Allergy testing is useful if the allergen causing the symptoms can be avoided e.g animal dander. This is more difficult if the allergen identified is a pollen, although exposure can be minimised. Various web sites e.g. Met Office[5] and mobile

phone applications may be accessed to provide awareness of pollen counts, enabling the sufferer to reduce exposure by staying indoors, closing windows or wearing sunglasses if venturing outside. Drying laundry in a tumble dryer to prevent bringing pollen indoors may be useful. Avoidance of the allergen, if known and possible, should be encouraged.

Management of allergic rhinitis

Management will depend on the severity of symptoms. See page 19 for an algorithm detailing treatment options.[6]

A once daily, non sedating, antihistamine may be all that is needed to control the symptoms. Antihistamines are commonly taken orally, but are also available as nasal sprays. More recently a combination of nasal steroid with an antihistamine can be prescribed for more severe cases where prior treatment has failed. Many patients prefer to buy these products at a pharmacy ('over the counter') as a prescription is not always required and it may be cheaper. It is worth remembering to ask patients if they have already tried any 'OTC' products.

Nasal douching has become more popular in recent years and can be tried. Douching removes the triggers from the nasal passages together with the inflammatory products.

If nasal symptoms persist, nasal corticosteroid sprays should be introduced, these are particularly useful in treating nasal blockage. Allergic rhinitis has been likened to "asthma in the nose" therefore, it is not surprising that a nasal corticosteroid spray should be used to treat the condition. It must be stressed that, as with inhaled corticosteroids for asthma, use of the nasal spray should be regular, usually daily, and not just when symptoms are troublesome. Nasal inhaler technique is also very important and often incorrectly done by patients.

Short term use (< 7days) of a nasal or oral decongestant may be advised during particularly severe episodes, especially if nasal blockage is a problem.

Leukotriene receptor antagonists (LTRAs) are another treatment which is particular helpful to treat persistent symptoms in patients with asthma as they treat both conditions.

It is also worth considering the total steroid daily dose if a patient is already on an ICS for asthma and possibly steroid creams for eczema. Systemic absorption between ICS and nasal steroids varies and should be considered when recommending treatments.

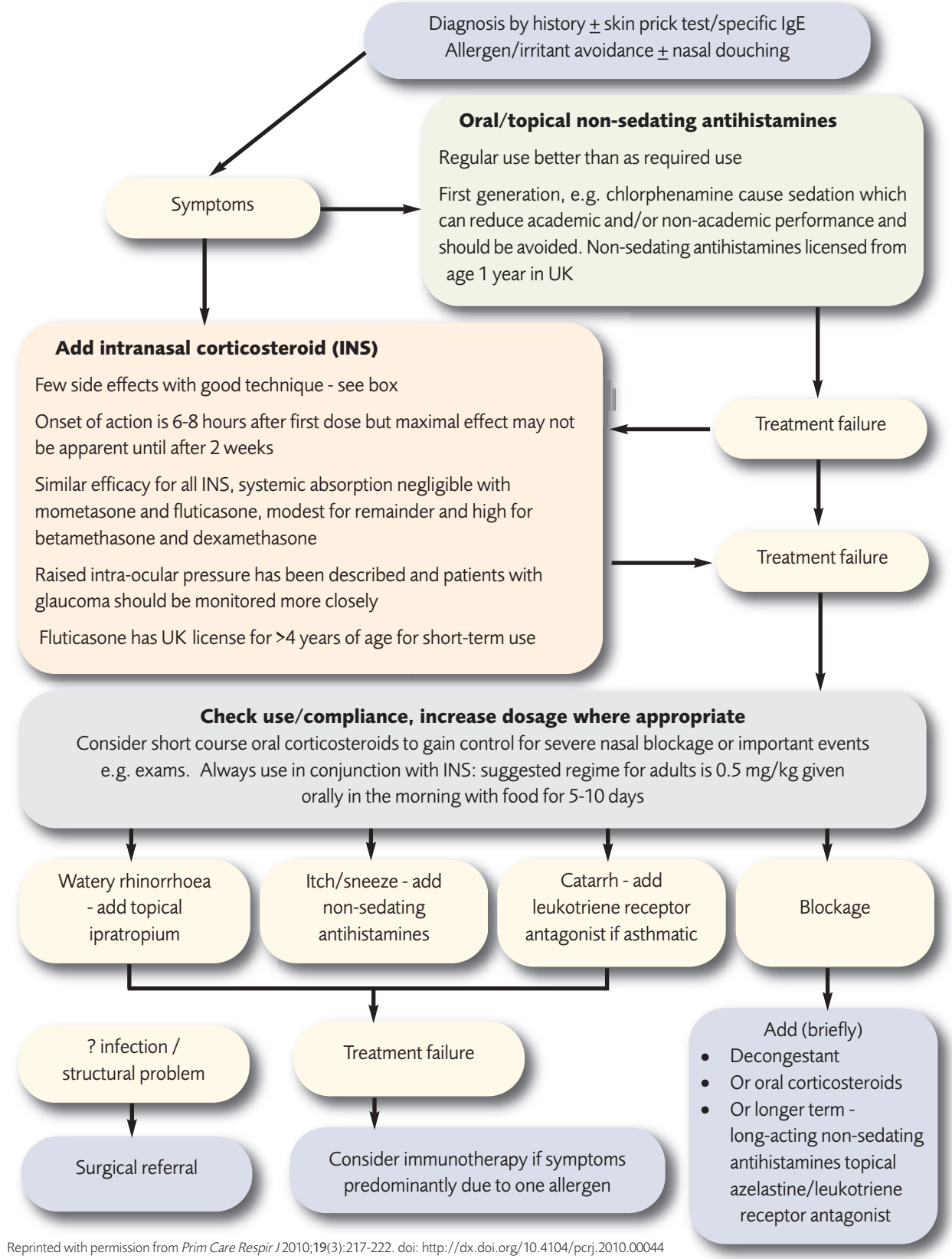
Unfortunately, the peak hay fever season often coincides with examination time for teenagers. It has been found that untreated/poorly managed allergic rhinitis can affect exam results.[7,8] It is good practice to start treatment at least 2 weeks ahead of the expected onset of the hay fever season so that treatment is well established when the pollen count begins to rise. This preventative action could be included in a Personal Asthma Action Plan (PAAP). Routine reviews could be planned so that recall occurs just before the expected onset of hay fever.

Professional Development – Further Study and Reflection

Visit the Asthma UK website at http://www.asthma.org.uk/ Sites/healthcare-professionals/news/the-asthma-uk-helpline-in-action-rhinitis to read about a case study on how to explain to a teenager that "the cold that won't go away" is actually rhinitis. Have you got any adolescents with rhinitis? Are you confident in explaining to them what rhinitis is and how it is best treated? Are you prepared for the hay fever season and can you support your teenagers with rhinitis who are going through their exams? Why not prepare a short case study of one of your patients with asthma and rhinitis and reflect on how you are best able to support this patient?

The British Society for Allergy and Clinical Immunology undertake regional primary care allergy training days. For more information visit their website at http://www.bsaci.org/meetings-and-events/regional-meetings

Algorithm for the treatment of rhinitis



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Top Tips - Rhinitis

1. Allergic rhinitis lasts longer than a cold – but colds trigger more asthma attacks. The main difference between a cold and rhinitis is how long the patient has been having symptoms. Cold symptoms that continue longer than a week, regardless of the time of year, are usually due to something other than a virus. If the patient does in fact have a cold and not rhinitis remind them to be vigilant about their asthma. The cold virus is the most common trigger for asthma and this can be especially difficult for children as they catch colds more frequently than adults.
2. Think Christmas - Think Rhinitis. Alder, birch and hazel can come into pollen as early as January. If you have patients who have seasonal rhinitis caused by these trees then they need to start their nasal spray or drops and antihistamine tablets two weeks before their rhinitis symptoms begin. Asthma reviews for these patients should ideally be in December so their medications are up to date and ready for them to start taking in the New Year. Grass pollen affects some people mainly May – July so for this group of people preventive treatments need to start in April. As well as seasonal rhinitis there is also perennial allergic rhinitis and these commonly relate to indoor allergens such as dust mites, pets, mould and smoking.
3. Nasal spray technique is paramount. Using the nasal spray correctly is the key to avoiding rhinitis flare ups. Key points are: point the spray slightly outwards and don't sniff! People often stop using their nasal spray because "it's not working" but in fact they are not using it properly. An excellent video is available at http://www.itchysneezywheezy.co.uk/RhinitisVideos.html .
4. Prevention is better than cure for rhinitis. Patients need to keep using their nasal spray even when they don't have symptoms. They might be using their nasal spray for months with no symptoms – tell them this is OK.
5. Decongestants can help occasionally but should only be taken for a short period of time. If the patient has a 'special day' eg exam or wedding nasal sprays that contains decongestant may be useful but should not be used regularly because after a few days they can actually make symptoms worse. In addition to proper treatment, proprietary non-drug solutions that douche or wash-out mucus from blocked noses and sinuses give temporary relief.

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http://www.asthma.org.uk/Sites/healthcare-professionals/news/top-tips-rhinitis

If all treatments have been explored and found not to fully control rhinitis symptoms, despite checking adherence and technique, it may be advisable to prescribe a short course of oral steroids to cover a particularly important event (e.g exam time).

In very severe cases, referral and immunotherapy may be needed, although this tends to be only suitable for patients without asthma and having a single trigger causing their rhinitis symptoms.

Allergic rhinitis can usually be very effectively managed in primary care, however, it is essential that patients and clinicians alike are aware of it's significance and impact on the lives of sufferers.

Further information

- ARIA (Allergic Rhinitis Impact in Asthma) guidelines http://www.whiar.org/Documents&Resources.php
- Allergy UK https://www.allergyuk.org/hayfever-and-allergic-rhinitis/hay-fever-and-allergic-rhinitis.
- British Society for Allergy and Clinical Immunology (BSACI) Primary Care Guidelines http://www.bsaci.org/guidelines/primary-care-guidelines

References

1. Angier E, Willington J, Scadding G, Holmes S, Walker S. Management of allergic and non-allergic rhinitis:a primary care perspective summary of the BSAIC guideline. *Prim Care Respiratory J* 2010;**19**:217-22. (http://www.nature.com/articles/pcrj201044)
2. Clatsworthy J, Price D, Ryan D, Haughney J, Horne R. The value of self-report assessment of adherence, rhinitis and smoking in relation to asthma control. *Prim Care Respiratory J* 2009;**18**:300-305 (http://www.nature.com/articles/pcrj200937)
3. Management of allergic rhinitis and its impact on asthma (ARIA) http://www.whiar.org/Documents&Resources.php. Last accessed 20/04/15
4. Moscato G, Vandeplas O, Van Will RG, *et al.* EACCI Position paper on occupational rhinitis. www.respiratory research/fulltext (accessed 02.04.2015)
5. Meteorological Office. Pollen chart. http://www.metoffice.gov.uk (accessed 07.04.2015)
6. Scadding G , Walker S. Poor asthma control?- then look up the nose. The importance of co-morbid rhinitis in patients with asthma. *Prim Care Respiratory J* 2012; **21**:222-28 (http://www.nature.com/articles/pcrj201235)
7. Walker S, Khan-Wasti S, Fletcher M, Cullinan P, Harris J, Sheikh A. Seasonal allergic rhinitis is associated with a detrimental effect on examination performance in United Kingdom teenagers: case-control study. *J Allergy Clin Immunol* 2007;**120**:381-7. http://dx.doi.org/10.1016/j.jaci.2007.03.034
8. Hammersley V, Walker S, Sheikh A. Is it unfair to hay fever sufferers to have to sit examinations during periods of high pollen counts? *Expert Rev Resp Med* 2010;**4**:421-5.

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 ****

The use of β2-agonist therapy before hospital attendance for severe asthma exacerbations: a post-hoc analysis
Mitesh Patel, Janine Pilcher, Robert J Hancox, Davitt Sheahan, Alison Pritchard, Irene Braithwaite, Dominick Shaw, Peter Black, Mark Weatherall & Richard Beasley for the SMART Study Group. *npj Primary Care Respiratory Medicine* 25, Article number: 14099 (2015) doi:10.1038/npjpcrm.2014.99 Published online 08 January 2015

New data show that prior to attending hospital with severe asthma, most patients overuse their beta-agonist inhalers for prolonged periods. Beta-agonists relax muscles in the lungs to widen the airways and ease breathing. However, patients may overuse when symptoms worsen and delay seeking medical assistance. Mitesh Patel at the Medical Research Institute of New Zealand, and colleagues, examined the patterns of beta-agonist use in 303 patients by electronically monitoring inhaler use. Over the course of six months, there were 22 hospital attendances. In 90% of occasions when patients overused their beta-agonist, medical review was not obtained within the subsequent 48 hours. Such periods of overuse represent key opportunities for patients to seek medical review and reduce the risk of a life-threatening attack.

Impact of a patient-specific co-designed COPD care scorecard on COPD care quality: a quasi-experimental study
C Michael Roberts, Gulsen Gungor, Mike Parker, John Craig & James Mountford. *npj Primary Care Respiratory Medicine* 25, Article number: 15017 (2015) doi:10.1038/npjpcrm.2015.17 Published online 26 March 2015

Giving patients with chronic lung disease personalized information that highlights gaps in their treatment can improve their care. Management of patients with chronic obstructive pulmonary disease (COPD) often falls short of recommended evidence-based guidelines. Led by Christopher Roberts from the Queen Mary University of London, the researchers completed scorecards with 640 patients, matching their care against evidence-based guidelines. Patients were encouraged to use their scorecard during their GP visits to negotiate better care with their healthcare team. Results showed patients using the scorecards were more likely than other patients to be referred to pulmonary rehabilitation and to have evidence-based tests to confirm their diagnosis. Giving patients personalized information about their quality of care is a positive factor in developing mutually beneficial partnerships between patients and their healthcare providers, the authors concluded.

Suspected community-acquired pneumonia in an ambulatory setting (CAPA): a French prospective observational cohort study in general practice
Henri Partouche, Céline Buffel du Vaure, Virginie Personne, Chloé Le Cossec, Camille Garcin, Alain Lorenzo, Christian Ghasarossian, Paul Landais, Laurent Toubiana & Serge Gilberg. *npj Primary Care Respiratory Medicine* 25, Article number: 15010 (2015) doi:10.1038/npjpcrm.2015.10 Published online 12 March 2015

Routine X-ray assessment is of questionable usefulness in the management of patients with suspected community acquired pneumonia (CAP), an observational study suggests. CAP is one of the most common infectious diseases and a significant cause of mortality worldwide. Due to its rapid onset, early diagnosis of CAP is vital. Henri Partouche and colleagues from the Paris Descartes University in France conducted a study of 886 patients presenting with symptoms suggestive of CAP in general practice. In 70% of cases, the pa-

tient had experienced a sudden onset of all three of the most common symptoms: cough, fever and weakness or muscle pain. More than 90% of patients were given antibiotics regardless of chest X-ray assessment, and most of these recovered without complication. These findings confirm the low relevance of routine X-ray in assessing suspected CAP in primary care, the authors note.

Differences in spirometry interpretation algorithms: influence on decision making among primary-care physicians
Xiao-Ou He, Anthony D'Urzo, Pieter Jugovic, Reuven Jhirad, Prateek Sehgal & Evan Lilly. *npj Primary Care Respiratory Medicine* 25, Article number: 15008 (2015) doi:10.1038/npjpcrm.2015.8 Published online 12 March 2015

Variations among algorithms used to interpret 'blow' tests for diagnosis of asthma and lung disease may be skewing test results. The researchers, led by Anthony D'Urzo from the University of Toronto in Canada, had 113 primary care physicians make diagnoses from nine sets of blow test or spirogram results using two different spirogram interpretation algorithms (SIAs). They found for a particular case with impaired blow test results, one SIA resulted in a 'normal' diagnosis by 78% of physicians, while the other resulted in a diagnosis of 'consistent with asthma' by 94% of doctors. The findings suggest a need to standardise the algorithms in order to minimise differences in interpreting data, and underscore the importance of educating physicians about the pitfalls of using spirograms in isolation.

Annual costs of chronic obstructive pulmonary disease in Finland during 1996–2006 and a prediction model for 2007–2030
Fredrik Herse, Toni Kiljander & Lauri Lehtimäki. *npj Primary Care Respiratory Medicine* 25, Article number: 15015 (2015) doi:10.1038/npjpcrm.2015.15 Published online 26 March 2015

Scientists in Finland predict a 60% rise in annual costs of providing hospital care and medication for patients with lung disease by 2030. Chronic obstructive pulmonary disease (COPD) is a collective term for a number of lung diseases, often related to smoking and predominantly affecting older people. Lauri Lehtimäki at the University of Tampere, Finland, and co-workers calculated that the annual cost of COPD care in the country is around 100 million euros, based on national healthcare data from 1996–2006. The researchers took into account both direct costs (hospital in-patient and out-patient visits, and medication) and indirect costs (sickness and disability benefits). They created a computer model which predicted an increase of 60% in direct costs between 2007 and 2030, mainly due to an ageing population and a need for improved smoking cessation policies.

Feasibility and effectiveness of an Asthma/COPD service for primary care: a cross-sectional baseline description and longitudinal results
Esther I Metting, Roland A Riemersma, Janwillem H Kocks, Margriet G Piersma-Wichers, Robbert Sanderman & Thys van der Molen. *npj Primary Care Respiratory Medicine* 25, Article number: 14101 (2015) doi:10.1038/npjpcrm.2014.101 Published online 08 January 2015

An online support service from lung specialists provides an effective way of guiding doctors in initial diagnosis of asthma and lung disease. Asthma and chronic obstructive pulmonary disease (COPD) are respiratory conditions that are difficult to distinguish in early diagnosis, and sometimes occur in unison. Esther Metting and co-workers at the University Medical Center Groningen, the Netherlands, analyzed data from an online support network set up in 2007 by Dutch lung specialists and general practitioners (GPs). The specialists interpreted results from patients' spirometry tests entered into the online system by GPs. This link between primary and secondary care increased the number of correct diagnoses, and reduced the number of cases of unstable COPD and uncontrolled asthma. The researchers believe online support is a feasible and effective way of assessing respiratory disease patients and improving individual care.

The impact of primary care on emergency department presentation and hospital admission with pneumonia: a case–control study of preschool-aged children
Diane P Emery, Tania Milne, Catherine A Gilchrist, Megan J Gibbons, Elizabeth Robinson, Gregor D Coster, Christopher B Forrest, Anthony Harnden, David Mant & Cameron C Grant. *npj Primary Care Respiratory Medicine* 25, Article number: 14113 (2015) doi:10.1038/npjpcrm.2014.113 Published online 05 February 2015

Preschoolers with pneumonia who have easy access to their GP and continuous care are less likely to present to emergency departments (ED). An international team led by Cameron Grant from the University of Auckland in New Zealand found in this case-controlled study that children were two and a half times more likely to present to ED if they did not have a regular GP and almost twice as likely if their GP worked less than 20 hours a week. Lower parental satisfaction with primary care doubled the likelihood of a presentation to the ED. Children were more likely to be admitted to hospital if they were on antibiotics or had been referred by their GP. The authors conclude that easily accessible and comprehensive primary care can prevent inappropriate use of emergency resources.

The minimal clinically important difference of the control of allergic rhinitis and asthma test (CARAT): cross-cultural validation and relation with pollen counts
Sander van der Leeuw, Thys van der Molen, PN Richard Dekhuijzen, Joao A Fonseca, Frederik A van Gemert, Roy Gerth van Wijk, Janwillem WH Kocks, Helma Oosterom, Roland A Riemersma, Ioanna G Tsiligianni, Letty A de Weger, Joanne NG Oude Elberink & Bertine MJ Flokstra-de Blok. *npj Primary Care Respiratory Medicine* 25, Article number: 14107 (2015) doi:10.1038/npjpcrm.2014.107 Published online 08 January 2015

A Dutch study clarifies the threshold of clinical importance for a questionnaire aimed at monitoring allergic rhinitis and asthma. The 'Control of Allergic Rhinitis and Asthma Test' (CARAT) was developed in Portugal to monitor control of the two respiratory diseases, which often occur together in patients and can be difficult for doctors to distinguish. Thus, many patients do not receive the combined upper and lower airway treatment required to manage both diseases. In a three-month trial in 92 patients in the Netherlands in 2012, Bertine Flokstra-de Blok at the University of Groningen and colleagues determined the 'minimal clinically important difference' of the questionnaire – a measure of the questionnaire score at which patients perceived a definite change in symptoms as a result of treatment. The researchers verified CARAT as a useful and reliable tool for the Dutch population.

Novel equations better predict lung age: a retrospective analysis using two cohorts of participants with medical check-up examinations in Japan

Yasushi Ishida, Yuri Endo Ichikawa, Motonori Fukakusa, Akiko Kawatsu & Katsunori Masuda. *npj Primary Care Respiratory Medicine* 25, Article number: 15011 (2015)
doi:10.1038/npjpcrm.2015.11 Published online 19 March 2015

Lung function measurements from thousands of healthy non-smokers help improve equations used to predict the 'lung age' of Japanese adults. Smoking is the main cause of chronic lung diseases such as bronchitis and emphysema. Smokers are given a 'lung age' following lung function tests, illustrating the premature aging of their lungs. This improves patients' understanding of results, and can encourage them to quit smoking. To improve equations used to calculate 'lung age' in the Japanese population, Yasushi Ishida at Ehime Prefectural Central Hospital, together with researchers across Japan, collected data on lung functions in 15,238 healthy participants. The team included novel variables such as 'forced expiratory volume in one second' in their calculations. They validated the resulting equations for males and for females using a second group of over 2000 people.

Effects of continuous positive airway pressure therapy on glycaemic control, insulin sensitivity and body mass index in patients with obstructive sleep apnoea and type 2 diabetes: a systematic review and meta-analysis

Ye Feng, Zhe Zhang & Zhou-zhou Dong. *npj Primary Care Respiratory Medicine* 25, Article number: 15005 (2015)
doi:10.1038/npjpcrm.2015.5 Published online 26 February 2015

Treating obstructive sleep apnea (OSA) with continuous positive airway pressure (CPAP) may improve insulin sensitivity. Up to 30% of patients with OSA, a condition in which breathing is interrupted due to throat narrowing during sleep, also suffer from type 2 diabetes mellitus (T2DM). Ye Feng from the Zhejiang University School of Medicine in China and colleagues systematically reviewed six studies examining the effects of CPAP treatment for OSA on indicators of T2DM. Following CPAP treatment for up to 4 months, no significant changes in blood sugar levels or body weight were noted. However, the research team found a significant improvement in insulin sensitivity. These findings raise the possibility that the application of mild air pressure to keep the airways open during the night could be used to treat both OSA and T2DM.

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:

A&E	Accident and Emergency
BMI	Body Mass Index
BTS	British Thoracic Society
CAP	Community Acquired Pneumonia
CI	Confidence Interval
CPAP	Continuous positive airway pressure
COPD	Chronic Obstructive Pulmonary Disease
CTPA	Computerised Tomography Pulmonary Angiogram
CVD	Cardiovascular Disease
ESS	Epworth Sleep Scale
FEV1	Forced expiratory volume in 1 second
FVC	Forced vital capacity
GP	General Practitioner
GOLD	Global Initiative for obstructive lung disease
ICS	Inhaled corticosteroid
LABA	Long-acting Beta-agonist
mMRC	Modified Medical Research Council
NNTB	Number needed to treat
OR	Odds ratio
OSA	Obstructive sleep apnoea
PE	Pulmonary embolism
PEF	Peak expiratory flow
PESI	Pulmonary Embolism Severity Index
PR	Pulmonary rehabilitation
QoL	Quality of Life
RCT	Randomised controlled trial
RR	relative risk
SIGN	Scottish Intercollegiate Guideline Network
SU	Sleep Unit

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

Investigating and managing suspected pulmonary embolism in an outpatient setting: the Leicester experience

Thorax

Vali Y, *et al*. *Thorax* 2015;70:291–293. doi:10.1136/thoraxjnl-2014-205513

Increasing evidence suggests that it is possible to identify patients with a low risk of death from PE who may be treated safely as outpatients. This paper from Leicester describes the experience of investigating and managing low risk patients with suspected PE in the outpatient setting.

Patients were eligible if they had no markers of cardiorespiratory compromise: pulse <110 bpm, systolic blood pressure >100 mm Hg, oxygen saturations >92%on air, respiratory rate <30 bpm, no history of collapse, normal troponin and no large central clot or features of right heart strain on CTPA. Patients were excluded if they had cognitive impairment, lack of transport or no access to a telephone, which might have affected compliance or their safe outpatient management. Patients with a high bleeding risk were excluded alongside those with a coexisting problem requiring hospital admission.

Over a 2-year period 971 patients with suspected PE who met all the eligibility criteria were referred to the service (66 patients were admitted prior to complete assessment as they were unsuitable for outpatient management). Assessment was performed by a specialist nurse using a standard protocol. Median age was 49 (range 18–92) years, and 614 (67.8%) were women.

754 (77.7%) patients were discharged and required no follow-up. 96 (10.6%) patients had PE confirmed of whom 70 (72.9%) were managed as outpatients. 14 (1.6%) patients have died since attending the clinic; no death was related to PE. Estimated cost savings (£250 per bed day) were £173,000 per annum.

This large study demonstrates the feasibility, safety and financial advantages of investigating and managing suspected PE in an ambulatory setting for selected patients. The modified PESI criteria used to select patients for outpatient investigation successfully identified a low risk group who did not require inpatient monitoring.

What Is the Role of Tiotropium in Asthma? A Systematic Review With Meta-analysis

CHEST

Rodrigo GJ *et al*; *CHEST* 2015;147(2):388–396; doi: 10.1378/chest.14-1698

The objective of this systematic review was to assess the efficacy and safety of tiotropium in symptomatic patients with asthma with a range of severity and treatment plans.

Studies had to meet all the following criteria: (1) adults and adolescents aged 12 years with symptomatic stable asthma of any severity and receiving ICSs or an ICS plus LABA; (2) RCT of ≥ 4 weeks duration; (3) comparison of inhaled tiotropium with any treatment; and (4) report pulmonary function (peak or trough FEV1; morning or evening PEF rate as a primary outcome.

Thirteen RCTs including 4,966 patients met the entry criteria. The selected studies were grouped into three treatment protocols: (1) tiotropium as add-on to ICS in patients with mild to moderate asthma, (2) tiotropium added to ICS vs ICS/LABA combination in patients with moderate asthma, and (3) tiotropium as add-on to ICS/LABA vs ICS/LABA in patients with severe asthma.

Tiotropium as an add-on to ICS showed clinically and statistically significant increases in PEF (22-24 L/min) and FEV1 (140-150 mL). Additionally, tiotropium decreased the rate of exacerbations (number needed to treat for benefit [NNTB], 36) and improved asthma control. Tiotropium added to ICS was not inferior to ICS/LABA.

Finally, the use of tiotropium as an add-on to ICS/LABA combination significantly increased pulmonary function, reduced asthma exacerbations (relative risk, 0.70; 95% CI, 0.53-0.94; NNTB, 17), and improved asthma control compared with ICS/LABA. Tiotropium was well tolerated, and no potential safety signals were observed.

This systematic review suggests that tiotropium is an option at step 3 and step 4 of the BTS/SIGN guideline. Benefits are increased lung function and in the case of patients with severe asthma, a reduction of exacerbations.

Characterisation of the frequent exacerbator phenotype in COPD patients in a large UK primary care population

McGarvey L *et al*. *Respiratory Medicine* 2015; 109, 228-237 http://dx.doi.org/10.1016/j.rmed.2014.12.006

The 'frequent exacerbator' is recognised as an important phenotype in COPD.

Current understanding about this phenotype comes from prospective longitudinal clinical trials in secondary/tertiary care with little information reported in primary care populations.

This UK study examined a large, representative database of primary care COPD patients to identify and characterize the COPD patients fulfilling GOLD criteria for high exacerbation risk and who therefore represent the COPD 'frequent exacerbator phenotype'.

9,219 patients were categorised using GOLD 2014 criteria into high and low risk groups based on exacerbation history. A multivariate logistic regression model was used to investigate covariates associated with the frequent-exacerbator phenotype and risk of experiencing a severe exacerbation (leading to hospitalisation).

2,612 (28%) fulfilled the criteria for high risk frequent-exacerbators. Independent risk factors for ≥2 exacerbations were mMRC dyspnea score grade 4 (Odds ratio (OR) 4.37 [2.64-7.23]); FEV1 <30 % predicted (OR 2.42 [1.61-3.65]), co-morbid cardiovascular disease (OR 1.42 [1.19-1.68]), depression (OR 1.56 [1.22-1.99]) or osteo-

porosis (OR 1.54 [1.19-2.01]), and female gender (OR 1.20 [1.01-1.43]). Older patients (≥75 years), those with most severe lung impairment (FEV1 <30%), those with highest mMRC score and those with co-morbid osteoporosis were identified as most at risk of experiencing exacerbations requiring hospitalisation.

Worsening mMRC dyspnoea score, more severe disease, co-morbidities (CVD, depression and osteoporosis) and female gender were independent risk factors for having frequent exacerbations. Older patients with severe disease and co-morbid osteoporosis were most at risk of hospitalisation.

Grandmother's smoking when pregnant with the mother and asthma in the grandchild: the Norwegian Mother and Child Cohort Study

Thorax

Magnus MC, *et al. Thorax* 2015;70:237–243. doi:10.1136/thoraxjnl-2014-206438

Exposure to maternal smoking during pregnancy is associated with decreased lung function both in childhood and adulthood. A biological plausibility exists for a trans-generational influence of prenatal tobacco smoke exposure on asthma development. Differential methylation, an epigenetic alteration, has also been reproducibly observed in newborns whose mothers smoked during pregnancy. Epigenetic mechanisms therefore constitute one underlying mechanisms which might explain a trans-generational effect of tobacco smoke exposure.

This study examined the association between the grandmother's smoking when pregnant with the mother and asthma development in the grandchild using the prospective population-based pregnancy cohort Norwegian Mother and Child Cohort Study (MoBa).

MoBa recruited pregnant women between 1999 and 2008, resulting in approximately 95,200 mothers and 114,500 children. Asthma outcomes were ascertained from questionnaires and from linkage to a national prescribing registry. They examined the grandmother's smoking when pregnant with the mother in relation to asthma outcomes in the grandchild (current asthma at 36 months (N=53 169, cases=3,013), current asthma at 7 years (N=25,394, cases=1,265) and dispensed asthma medications at 7 years (N=45,607, cases=1,787)).

23.5% of mothers reported that their mother smoked when pregnant with them. The grandmother's smoking when pregnant with the mother was positively associated with asthma at 36 months (RR 1.15 (95% CI 1.06 to 1.24)), asthma at 7 years (RR 1.21 (95% CI 1.07 to 1.37)) and dispensed asthma medications at 7 years (RR 1.15 (95% CI 1.04 to 1.26)). This positive association did not differ significantly by the mother's smoking status when pregnant with the child.

The grandmother's smoking when pregnant with the mother increased the risk of asthma in the grandchild independent of the mother's smoking status. While these findings support the idea that prenatal tobacco smoke exposure might have a trans-generational influence on asthma development, given the limited information on the grandmother's socioeconomic status, asthma status and other factors, unmeasured confounding may be present.

Patients' practices and experiences of using nebuliser therapy in the management of COPD at home

BMJ Open Respiratory Research

Alhaddad B *et al. BMJ Open Resp Res* 2015;2:e000076. doi:10.1136/bmjresp-2014-000076

Nebuliser therapy has a role in the management of severe COPD in the community, with a positive impact on quality of life. The aim of this cross sectional descriptive study was to identify the practicalities and problems associated with nebuliser use by patients with COPD at home, which may impact on the safety and effectiveness of therapy.

In-depth interviews were conducted with a representative sample of 50 patients with COPD, recruited from two levels of care: primary care, involving 38 GP practices in North West London, and intermediate care with a major acute hospital.

The participants comprised 21 male and 29 female patients with a mean age of 71 years. Thirty-two lived alone and 15 were assisted by a family carer. For 24 patients, the COPD was severe (30– 49%), for 16, moderate (50–79%) and for 10 patients, mild (≥ 80%). The mean duration of nebuliser use was 9 years (range 6 months to 30 years).

A wide range of practical issues was identified at all stages: problems prior to nebulisation: setting up equipment, lack of instructions, manual dexterity and time required. Problems during medication administration: inhalation technique, duration of nebulisation and understanding how to achieve optimal efficacy. Problems post-administration: inadequate cleaning of nebuliser components, access to accessories and use of damaged parts or self-repairs. Other problems included noise, weight and non-portability of equipment.

Interestingly most patients had mild to moderate disease and 80% of the patients acquired their nebuliser through a route other than the hospital, and most had received no instruction on its use.

The use of nebulisers in a home setting should have appropriate assessment and support services for these patients if optimal outcomes from medication are to be achieved.

Sarcopenia in COPD: prevalence, clinical correlates and response to pulmonary rehabilitation

Thorax

Jones SE, *et al. Thorax* 2015;70:213–218. doi:10.1136/thoraxjnl-2014-206440

Skeletal muscle dysfunction is a recognised manifestation of COPD which is associated with a poor prognosis independent of lung function. Sarcopenia describes age-related loss of skeletal muscle, which leads to increased risk of physical disability, poor health status and death. Sarcopenia is increasingly recognised as a clinical syndrome with multiple contributing factors, including physical inactivity, malnutrition and chronic disease. Since COPD, in some respects, is considered a disease of accelerated ageing, sarcopenia might be expected to be relevant to patients with COPD.

This study, used the European Working Group on Sarcopenia in Older People (EWGSOP) criteria to determine the prevalence and risk factors for sarcopenia in COPD and to determine the impact of sarcopenia on functional exercise capacity and health status. They

examined the relationship between sarcopenia and quadriceps strength and explored if it can be reversed by exercise training as part of pulmonary rehabilitation (PR).

EWGSOP criteria were applied to 622 outpatients with stable COPD. Body composition, exercise capacity, functional performance, physical activity and health status were assessed. Using a case–control design, response to PR was determined in 43 patients with sarcopenia and a propensity score-matched non-sarcopenic group.

Prevalence of sarcopenia in this cohort of patients attending an outpatient clinic was 14.5% (95% CI:11.8% to 17.4%), which increased with age and Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) stage, but did not differ by gender or the presence of quadriceps weakness (14.9 vs 13.8%, p=0.40). Patients with sarcopenia had reduced exercise capacity, functional performance, physical activity and health status compared with patients without sarcopenia (p<0.001), but responded similarly following PR; 12/43 patients were no longer classified as sarcopenic following PR.

Sarcopenia affects 15% of patients with stable severe COPD and is associated with impaired function and health status. Sarcopenia does not affect response to PR, which can lead to a reversal of the syndrome in some patients.

Airflow obstruction case finding in community-pharmacies: A novel strategy to reduce COPD underdiagnosis

Castillo D *et al*. http://dx.doi.org/10.1016/j.rmed.2015.02.009

Case finding has been defined as a useful strategy in identifying undiagnosed COPD. This has been studied in primary and secondary care but has not been validated outside these settings. Community pharmacies have access to subjects at high-risk of suffering COPD.

This prospective, cross-sectional, multicentre study from Barcelona investigated the feasibility of a COPD case finding program in 100 community pharmacists. Pharmacists were trained in a four-day workshop on spirometry and COPD, and each was provided with a spirometer for 12 weeks.

Pharmacy customers within the targeted group (>40 years) were asked about respiratory symptoms and smoking. If interested in the study, customers signed a consent form and answered a standardised questionnaire. Those with a previous history of lung disease or use of respiratory medication were excluded.

Overall 2,295 (73.5%), of 3,121 customers invited to participate in the programme accepted, and 1,456 (63.4%) were identified as "high risk" for COPD using the (5 question) GOLD questionnaire. Of 1,423 individuals completing quality-controlled pre-bronchodilator spirometry, 282 (19.8%) had airflow limitation with an FEV1/FVC% ratio <0.70 compatible with COPD. Clinically acceptable quality spirometries were obtained in 69.4% of the cases.

244 subjects with airflow limitation were referred to their primary care physician for further evaluation. Only 39 (15%) of them provided feed-back to the community pharmacist and in eleven of them (28%) the diagnosis of COPD was confirmed by the physician.

Adequately trained and supported community pharmacists can effectively identify individuals at high risk of suffering COPD. However, developing useful links between primary care and the community pharmacist is mandatory to achieve a successful programme.

Predicting risk of COPD in primary care: development and validation of a clinical risk score

Haroon S *et al*. *BMJ Open Resp Res* 2014;1: e000060. doi:10.1136/ bmjresp-2014-000060

Early identification of COPD can help reduce disease progression yet opportunities to diagnose COPD are frequently missed in primary care.

This paper reports the development and external validation of a clinical prediction model that provides a score for identifying patients at high risk of undiagnosed COPD using clinical factors routinely recorded in primary care.

15,159 newly diagnosed COPD cases and 28,296 controls from 340 UK general practices, enrolled in the Clinical Practice Research Datalink, were included in the development sample. Mean age was 70 years and 52% were male. Candidate risk factors were included in a conditional logistic regression model to produce a clinical score. Accuracy of the score was estimated on a separate external validation sample derived from 20 practices that included 2,259 cases and 4,196 controls (mean age 70 years, 50% male).

The model included four variables including smoking status, history of asthma, and lower respiratory tract infections and prescription of salbutamol in the previous 3 years. It had a high average c statistic of 0.85 (95% CI 0.83 to 0.86) and yielded a sensitivity of 63.2% (95% CI 63.1 to 63.3) and specificity 87.4% (95% CI 87.3 to 87.5).

The model was based on routinely collected data and the authors were not able to confirm the coded diagnosis of COPD by assessing quality assured spirometry. Furthermore age and sex, which are likely to be predictors of COPD, could not be incorporated in the model because of the matched case-control data.

Further work is needed to validate or adapt this preliminary model in other populations.

Role of primary care in the follow-up of patients with obstructive sleep apnoea undergoing CPAP treatment: a randomised controlled trial

Sánchez-de-la-Torre M, *et al*. *Thorax* 2015;70:346–352. doi:10.1136/thoraxjnl-2014-206287

Treating OSA with CPAP improves symptoms and quality of life, decreases traffic accidents and may positively affect cardiovascular morbidity. The effectiveness of this treatment is directly related to compliance. The number of patients undergoing CPAP treatment has increased in recent years, putting pressure on limited resources.

This randomised, controlled, prospective parallel group study from Spain examined the efficacy of primary care versus conventional sleep unit follow-up of patients with OSA beginning CPAP treatment. The primary outcome was CPAP compliance at 6 months. The secondary outcomes were ESS score, QoL, patient satisfaction, BMI, blood pressure and cost-effectiveness.

One physician and one nurse from each of the eight primary care units in the study participated in a 6-hour education programme, delivered by the secondary care team.

101 patients were randomised to receive primary care management and 109 were randomized to receive sleep unit management. Both groups were comparable and consisted predominantly of middle-aged, obese men with severe OSA. BMI was significantly higher in the sleep unit group.

The CPAP compliance was (mean (95% CI) 4.94 hours/night (4.47 to 5.5) vs 5.23 (4.79 to 5.66) , p=0.18) in primary care and sleep unit groups, respectively. At 6 months, there was a decrease in the ESS score in both groups (p<0.001) but this was greater in the sleep unit group (p=0.04). Patient satisfaction was significantly higher in the SU group (p<0.001). However, in the primary care setting, there was a cost saving of 60%, with similar effectiveness, as well as a decrease in systolic blood pressure.

Among patients with OSA, treatment under a primary care model compared with a specialist model did not result in worse CPAP compliance. Therefore, follow-up in primary care settings is a realistic and cost-effective alternative to conventional sleep unit follow-up.

The cost of treating severe refractory asthma in the UK: an economic analysis from the British Thoracic Society Difficult Asthma Registry

Thorax

O'Neill S *et al* on behalf of the British Thoracic Society Difficult Asthma Network. *Thorax* 2015;70:376–378. doi:10.1136/thoraxjnl-2013-204114

Severe refractory asthma poses a substantial burden in terms of healthcare costs.

This paper focuses on patients with severe refractory asthma and explores the direct annual treatment costs and drivers of cost within this population. The data analysed are drawn from the British Thoracic Society National Registry for dedicated UK Difficult Asthma Services in 2012.

After multi-disciplinary assessment, patients were classified using the American Thoracic Society definition for refractory asthma (n=516) and compared with a group with difficult to manage asthma but who did not meet this classification. (n=80).

Data from the Registry captured healthcare utilisation including hospital admissions and GP/A&E unscheduled visits in the 12 months prior to being first seen at the difficult asthma clinics. Where data were not captured in the Registry, estimates were made based on expert opinion.

Annual mean treatment costs among severe refractory asthma patients were £2,912 to £4,217. These costs are greater than those for patients with the comparator group of poorly controlled 'difficult asthma' referred to the same clinics. A key finding of the study is that asthma medication is the major driver of total costs, not unscheduled care. Long acting bronchodilator/corticosteroid combination inhalers represent the greatest share of medication related costs. Maintenance oral corticosteroid treatment and frequent exacerbations are also important additional drivers of costs in this population. Significant predictors of costs were FEV1% predicted, location of care, maintenance oral corticosteroid treatment and body mass index.

PCRS-UK News Round-Up

NEW… PCRS-UK MEMBERS' DIRECTORY

Link up and communicate with your colleagues and search for other members in your area

As part of its website enhancement programme PCRS-UK is delighted to introduce the Members Directory (https://www.pcrs-uk.org/directory) which allows you to search and communicate with other members to share information, best practice, tips and advice and communicate with other members in your locality directly via our website.

The directory allows you to search for other members by name, town, professional status and region. The results of your search will display members' names, towns and professional status'. You also have the option to contact individual members through the site directly without exposing contact information such as email addresses.

The directory also allows you to identify any PCRS-UK regional leads and affiliated group leaders in the results of your searches by displaying these icons:-

PCRS-UK Regional Lead

PCRS-UK Affiliated Group Leader

This service is only available to members of the PCRS-UK and anyone using the directory must be logged in to the PCRS-UK website in order to access the page at https://www.pcrs-uk.org/directory. If you have forgotten your log-in information and you are a member please visit the website at https://www.pcrs-uk.org/user/password in order to submit your email and receive an email to access the site and update your user details including your password.

LONG TERM CONDITIONS AND RESPIRATORY IT SUPPORT SYSTEMS

There is a growing number of IT tools available to support both clinicians and local commissioners to manage the care of people with respiratory disease. These resources can support case-finding and disease management, provide templates to guide reviews and enable risk stratification, and many include audit tools to enable practices to monitor their care.

The East of England Respiratory SCN (Strategic Clinical Network) and PCRS-UK (Primary Care Respiratory Society UK) have collaborated to compile a list of currently available tools, which provide commissioners and clinicians with an overview and summary of their characteristics. What do they provide? Who sponsors them? What do they cost? Are they compatible with my practice system? What outcomes do they deliver? Where can I find more information? This overview is now available and aims to help you decide whether and how these tools can support respiratory care in your area.

Versions will be updated regularly. For more information or addition/changes, please contact the EoE Respiratory SCN team via www.eoescn.nhs.uk

You can access the tool at:
https://www.pcrs-uk.org/resource/Other/it-tools

ASTHMA UK UPDATES TRIGGERS INFORMATION

Asthma UK has updated the triggers section of its website to make it even easier for people with asthma to find the advice they need and to reflect the updated BTS/SIGN guidelines for asthma published last year.

For more information, go to:
http://www.asthma.org.uk/knowledge-triggers-a-z

BTS GUIDELINE FOR HOME OXYGEN USE

The British Thoracic Society (BTS) has published a new Guideline for Home Oxygen Use in adults which provides detailed, evidence based guidance for the use of oxygen by patients in their own homes or other non-acute hospital settings and offers practical advice where evidence is absent or inconclusive.

The scope of the guideline, which has been endorsed by PCRS-UK, extends to patients with a variety of long-term respiratory conditions, and also other patient groups currently prescribed home oxygen such as those with cardiac failure, and cluster headaches.

Key recommendations:

- Long Term Oxygen Therapy (LTOT) remains the most evidence-based form of home oxygen therapy, with no change to current indications and thresholds.
- Ambulatory Oxygen Therapy (AOT) assessment should be offered to patients already on LTOT if they are mobile outdoors. Patients who are active and de-saturate on exercise but do not meet the criteria for LTOT should be assessed for AOT in the context of their daily activity.
- Oxygen Therapy does not have a palliative role in patients with cancer or end-stage cardio-respiratory disease with intractable breathlessness if their resting oxygen levels are normal or only mildly hypoxaemic but above current LTOT thresholds.
- Short Burst Oxygen Therapy (SBOT) should not be ordered for use prior to or following exercise in COPD

PCRS-UK News Round-Up

patients whether or not they have resting hypoxaemia.

- A risk assessment approach should be adopted for assessing safety of all forms of home oxygen especially in smokers

Vikki Knowles, Respiratory Nurse Consultant, Guildford and Waverley CCG, PCRS-UK regional lead for South East England, and a member of the BTS Guideline Development Group, says: "The guidelines give a clear background to the evidence base surrounding the use of oxygen therapy and how services should be delivered".

The guidelines are available at http://bit.ly/1IaE61u

BRITISH LUNG FOUNDATION LAUNCHES NEW COPD SELF-MANAGEMENT PACK

The British Lung Foundation (BLF) has published a new comprehensive chronic obstructive pulmonary disease (COPD) self-management pack available to physiotherapists, nurses and doctors to help support their patients. The packs are intended to enable patients to take better control of their condition.

The pack, endorsed by PCRS-UK includes a self-management plan and exercise handbook. It has been developed in accordance with the National Institute for Health and Care Excellence (NICE) quality standards.

Healthcare professionals will be able to tailor the packs to the needs of their patients. The packs are available to order from the BLF website at www.blf.org.uk or alternatively by contacting Tel: 03000 030 555 / e-mail: sales@blf.org.uk.

Are you trying to improve respiratory care locally? Are you planning to use the improvement tools?

PCRS-UK is keen to support those leading change locally, particularly if you are using our improvement tools and seeking to implement national policy locally. It can be a bit isolating working alone to try to get a plan together and get others to join you. So we also recognise that having a sounding board and someone at the end of a phone to provide support and point you in the direction of useful resources, can be a help, especially in the early stages of a project when you are getting things off the ground.

If you would like some support, feel free to contact our policy adviser, Bronwen Thompson, by email at bronwen.thompson@pcrs-uk.org

If she can't help – she will look for someone who can....

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

Practice Nurse is inspired to improve asthma care after reading NRAD report


Francesca Robinson talks to **Sarah Anderson,** *Respiratory Leader, Yorkshire*

A practice nurse, who recently joined the PCRS-UK Clinical Leadership Programme, has launched a series of changes to improve asthma care in her practice after reading the National Review of Asthma Deaths (NRAD) report.

"You can't read a report like that and then not do anything about it, I would not have been able to sleep at night," says Sarah Anderson, who is respiratory lead for her Leeds practice.

"When the report came out a year ago I realised it needed action. I started to question my own practice and started thinking about the wider picture and what we could do to improve the care we provide for over 800 people with asthma in this practice."

First Sarah gave a presentation to her GPs who were surprised when they heard about the findings and recommendations of the report.

Then she printed out a list of patients who had received more than 12 prescriptions of salbutamol in a 12 month period – some had had more than 36 inhaler issues in that time. She called in the patients on this list that she felt were having problems with their asthma control. She reviewed them and educated them on using their inhalers after finding that many were unsure how they worked.

"If the patient's compliance is poor I explain to them about the NRAD report and its findings. Often they are quite surprised and tell me they didn't realise people still died as a result of having asthma. I've noticed this knowledge has increased their compliance. Some patients are now coming in more regularly if they are not feeling so well – before they just used to wait until their annual review," says Sarah.

Nurses in the practice were using different asthma action plans so Sarah has now standardised this, recommending that everyone uses the Asthma UK Action Plan. She has inserted a link to the plan into the asthma template.

Sarah has also worked to improve communications between the practice and secondary care to speed up the process of receiving documents after patients have been to accident and emergency (A&E) and have been admitted to hospital following an exacerbation. Now the practice admin team sends her a note informing her when a patient has been discharged so they can be followed up within 48 hours.

Sarah has also disseminated information about the NRAD report and shared the changes she has made in her own practice with the PCRS-UK affiliated Leeds Respiratory Network, she set up in 2013 with colleague Melissa Canavan.

She works only three days a week in her practice and has had to find the time to make these changes mainly by snatching ten minutes here and there in between patient appointments.

"You could spend all day every day sorting out respiratory issues but unfortunately as a practice nurse I can't spend all my time doing this. It is very rewarding to be able to make the changes and see the care of patients improve. In time we will need to audit the process".

"It has also been exciting to see the enthusiasm and passion for improving asthma care that has been rubbing off among colleagues in the Respiratory Network which has been expanding rapidly since we set it up in October 2013," says Sarah.

Improvement Tools

National Review of Asthma Deaths – Have you taken appropriate steps to protecting your patients with asthma?

Iain Small, *GP and PCRS-UK regional lead, Peterhead*

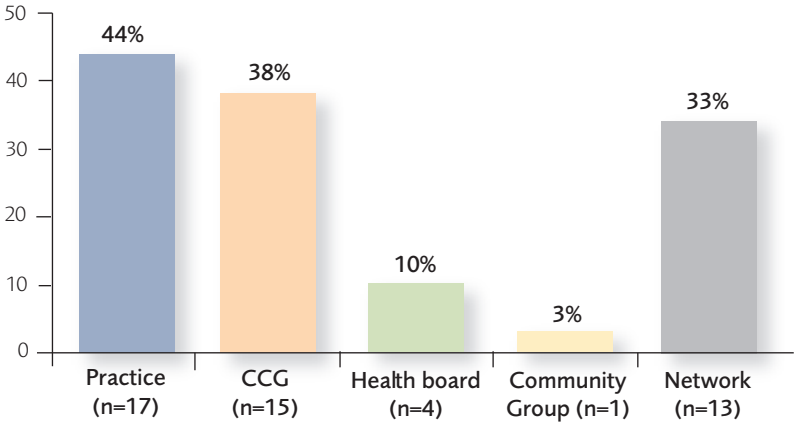
The National Review of Asthma Deaths (NRAD) was the first UK-wide investigation into asthma deaths and was published on the 6th May 2014. The review found wide-ranging and widespread issues with the quality of asthma care including routine care and management. The report was featured in our July 2014 edition of Primary Care Respiratory Update (see https://www.pcrs-uk.org/pcru) and included some suggestions of steps you can take locally to help address the findings of the report.

We know from the results of our survey that there are some great examples of work being undertaken (see page 31) in some areas whilst other areas are still catching up. There are a number of steps you can take within your practice to help ensure your patients with asthma are receiving optimal care and we have now produced a new Practice Improvement Worksheet specifically designed to offer you some simple steps to follow. You can download our NRAD Practice Improvement Worksheet at http://www.pcrs-uk.org/resource/improvement-tools/NRAD

What's been the impact of NRAD in your area?

The National Review of Asthma Deaths, published in May 2014, highlighted deficiencies in routine asthma care. PCRS-UK is currently conducting a survey to learn more about the impact of NRAD and to find out what is happened locally since NRAD was published.

Organisations initiating new activities as a result of NRAD



Results so far of PCRS-UK members (97 respondents) reveal that 93% agree that the report is a useful document that could drive improvements although 45% of respondents are unaware of any initiatives that have been undertaken locally as a result of NRAD. Where initiatives have been put in place these have been undertaken by the practice in 44% of cases highlighting the commitment and enthusiasm of PCRS-UK members to delivering high quality respiratory care in spite of the ever increasing pressures of working in primary care.

Help us find out what is happening locally as a result of NRAD

This is a very short survey of just 7 questions and takes only a few moments to complete – visit:

https://www.surveymonkey.com/r/NRAD1YearPCRU .

NHS Medway and Swale CCG using Stepping Down Triple Therapy Practice Improvement Worksheet

Tricia Bryant, *PCRS-UK Operations Director*

NHS Medway and Swale CCG have teamed up with PCRS-UK to encourage local healthcare practitioners across the region to use the Stepping Down Triple Therapy in COPD practice improvement worksheet. In a project led by Balraj Minhas, lead pharmacist and head of medicines optimisation at Swale CCG and Oni Odelade, lead pharmacist at Medway CCG the team are encouraging local practitioners to adopt the practice improvement worksheet within their practices with a view to reducing inappropriate triple therapy usage in COPD across the region. Participants are required to complete a survey on the usefulness of the tool.

WE NEED YOUR COMMENTS Please give us your feedback

In order to ensure our improvement tools are fit for purpose and meet the needs of our members we need your feedback. If you have used, or are planning to use any of our practice improvement worksheets or EQUIP modules please give us your feedback via a short online survey available at

https://www.surveymonkey.com/r/EQUIPPIW - It only takes a couple of minutes. Make sure you have your say and tell us what you think

Leading the way in respiratory care

SPIRIVA® was launched for use in COPD over 12 years ago[1] and has more than 40 million patient-years' experience to date.[2] In 2014, we added STRIVERDI® to our portfolio; a new LABA for COPD with a rapid onset of action.[3]

In asthma, SPIRIVA® Respimat® is the only LAMA licensed as an add-on maintenance bronchodilator treatment for adult asthma patients treated with a maintenance combination of ICS (≥800 µg budesonide/day or equivalent) and LABA who experienced ≥1 severe exacerbations in the previous year.[4]

The innovative Respimat® device is used across our portfolio, delivering a long-lasting, slow-moving aerosol cloud[5,6] that does not depend on high inspiratory flow rates.[7]

Once-Daily: *Turn, Open, Press.*

COPD

SPIRIVA®
Maintenance bronchodilator to relieve symptoms of patients with COPD.

STRIVERDI®
Maintenance bronchodilator to treat patients with COPD.

ASTHMA

SPIRIVA®
Add-on maintenance bronchodilator for adults with asthma maintained on ICS + LABA, with a history of ≥1 severe exacerbations in the previous year.

SPIRIVA® RESPIMAT® (tiotropium)

STRIVERDI® RESPIMAT® Olodaterol

Boehringer Ingelheim

Prescribing information for SPIRIVA® and references are adjacent.

Prescribing Information (UK) STRIVERDI® RESPIMAT® (olodaterol)
Solution for inhalation containing 2.5 microgram olodaterol (as hydrochloride) per puff. **Action:** beta$_2$-adrenergic agonist. **Indication:** Maintenance bronchodilator treatment in patients with chronic obstructive pulmonary disease (COPD). **Dose and Administration:** Adults only age 18 years or over: 5 microgram olodaterol given as two puffs from the Respimat inhaler once daily, at the same time of the day. **Contraindications:** Hypersensitivity to olodaterol or to any of the excipients; benzalkonium chloride, disodium edetate, purified water or citric acid (anhydrous). **Warnings and Precautions:** Not for use in asthma or the treatment of acute episodes of bronchospasm, i.e. as rescue therapy. Immediate hypersensitivity reactions may occur after administration. Inhaled medicines may cause inhalation-induced paradoxical bronchospasm. Caution in patients with: cardiovascular disorders, especially ischaemic heart disease, severe cardiac decompensation, cardiac arrhythmias, hypertrophic obstructive cardiomyopathy, hypertension and aneurysm; convulsive disorders or thyrotoxicosis; known or suspected prolongation of the QT interval (e.g. QT>0.44 s); patients unusually responsive to sympathomimetic amines. Experience in the following patient groups is limited therefore use with caution in patients: with a history of myocardial infarction during the previous year or unstable or life-threatening cardiac arrhythmia; hospitalised for heart failure during the previous year or with a diagnosis of paroxysmal tachycardia (>100 beats per minute). In some patients, like other beta-adrenergic agonists, olodaterol may produce: clinically significant cardiovascular effects; significant hypokalaemia; increases in plasma glucose after inhalation of high doses. Caution in planned operations with halogenated hydrocarbon anaesthetics due to increased susceptibility of adverse cardiac effects. Should not be used in conjunction with any other long-acting beta$_2$-adrenergic agonists. **Interactions:** Concomitant administration with other adrenergic agents (alone or in combination therapy) may potentiate the undesirable effects of Striverdi Respimat. Concomitant treatment with xanthine derivatives, steroids, or non-potassium sparing diuretics may potentiate any hypokalemic effect of adrenergic agonists. Beta-adrenergic blockers may weaken or antagonise the effect of Striverdi Respimat which should only be given together if there are compelling reasons for their use. MAO inhibitors, tricyclic antidepressants, or QTc prolonging drugs may potentiate the action of Striverdi Respimat on the cardiovascular system. **Fertility, Pregnancy and lactation:** No data on the use of Striverdi Respimat in pregnant women are available. As a precautionary measure, it is preferable to avoid use during pregnancy. Like other beta$_2$-adrenergic agonists, olodaterol may inhibit labour due to a relaxant effect on uterine smooth muscle. It is unknown whether olodaterol/metabolites are excreted in human milk. A decision on whether or not to discontinue/abstain from Striverdi Respimat should be made taking into account the benefit of breast feeding to the child or benefit of therapy for the woman. Clinical data on fertility are not available for Striverdi Respimat. **Effects on ability to drive and use machines:** No studies have been performed. The occurrence of dizziness may affect the ability to drive or operate machinery. **Undesirable effects:** Uncommon (≥1/1,000 to <1/100) Nasopharyngitis, dizziness, rash. Rare (≥1/10,000 to <1/1,000) Hypertension, arthralgia. Occurrence of undesirable effects related to the beta-adrenergic agonist class should be taken into account such as tachycardia, arrhythmia, palpitations, myocardial ischaemia, angina pectoris, hypertension or hypotension, hypokalemia, hyperglycemia, tremor, headache, nervousness, insomnia, dizziness, dry mouth, nausea, muscle spasms, fatigue, malaise, and metabolic acidosis. Prescribers should consult the Summary of Product Characteristics for further information on side effects **Pack sizes and NHS price:** Single pack: 1 Respimat inhaler and 1 cartridge providing 60 puffs (30 medicinal doses) £26.35 **Legal category:** POM **MA numbers:** PL 14598/0093 **Marketing Authorisation Holder:** Boehringer Ingelheim International GmbH, D-55216 Ingelheim am Rhein, Germany. Prescribers should consult the Summary of Product Characteristics for full prescribing information. **Prepared in** February 2014.

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 Boehringer Ingelheim Drug Safety on 0800 328 1627 (freephone). (UK only)

Date of preparation: April 2015 UK/RESP-151054

References:
1. SPIRIVA® HandiHaler® Summary of Product Characteristics.
2. Keating GM. *Drugs* 2014;74(15):1801-1826.
3. Striverdi® Respimat® Summary of Product Characteristics.
4. SPIRIVA® Respimat® Summary of Product Characteristics.
5. Hochrainer D *et al. J Aerosol Med* 2005;18:273-282.
6. Dalby RN *et al. Medical Devices. Evidence and Research* 2011;4:145-55.
7. Anderson P. *Int J Chron Obstruct Pulmon Dis* 2006;1(3):251-259.

COPD= chronic obstructive pulmonary disease; LABA= long-acting beta$_2$-agonist; LAMA= long-acting muscarinic antagonist; ICS= inhaled corticosteroid.

Regional Leaders' Workshops offer support and inspiration



Francesca Robinson, talks to **Deirdre Siddaway** and **Carla Astles** *PCRS-UK respiratory leaders programme participants*

Getting a new project off the ground can be an overwhelming prospect but for Deirdre Siddaway the whole process became much easier with the support of the PCRS-UK experienced respiratory leadership team.

A primary care Respiratory Nurse Specialist, Deirdre has been working to get an integrated respiratory pilot commissioned by Ipswich and East Suffolk CCG. The aim of the project is to reduce hospital admissions, reduce outpatient and A&E attendance and introduce cost effective prescribing.

"When I looked at what I was trying to achieve it was quite daunting but the last two PCRS-UK Respiratory Leaders' workshops have been on the theme of how you can make a project happen and have been enormously helpful. They guided me to look at the different steps I needed to take and taught me to be much more structured about what I wanted to accomplish.

"One of the phrases that I learned was to think about the "work before the work". This was about all the preparatory things you need to do before trying to get the project off the ground. That really helped me because I had no idea about how to get started."

"One of the things we talked about was that if you're going to try and get a service commissioned, think about the people you need to influence and then how the project is going to be evaluated if you get it commissioned. You need to think about that before you start because you need to be gathering that information from day one."

Deirdre says that in addition to the workshops she was able to contact people on the PCRS-UK leadership team. "Their help was absolutely amazing both in terms of thinking about the structure of my project, being able to signpost me to where to find information and suggesting people I could speak to, and also how I could get those people to speak to the commissioners. If I hadn't been to the leaders' workshops I would not have had all the push and drive I needed to get my service commissioned."

"A number of the speakers also gave out their email addresses and I was able to contact them to get more information about some of the topics they spoke about. I can't speak highly enough of the leaders' events," she says.

Carla Astles, COPD Nurse Educator for Southampton's Integrated COPD team and a Wessex CLAHRC (Collaboration for Leadership in Applied Health and Research) nurse involved in developing a service for improving respiratory care within a primary care setting, attended the November leaders' event for the first time.

She gave a critique of a clinical paper. "It was a safe environment in which to present, especially using a new skill, in my case critiquing a clinical paper, which I had no previous experience of doing. It was a learning event for me and I felt supported rather than

criticised and felt it was okay to make mistakes. I was terrified doing it but it was a really good opportunity to stick my head above the parapet in a friendly environment where there were people with amazing skills who were able to share their experience with me," she says.

Carla says when she returned she felt confident enough to say to her colleagues in their local journal club, that she would present a paper and share with them the template she had learnt to use for critiquing a paper.

"I've still got a lot to learn which is why the PCRS-UK leaders' workshops are such wonderful opportunities. It's not just the learning, but also the networking they provide which is invaluable. There are GPs, clinical nurses and nurses who have moved into leadership and service development and it's inspirational to listen to them and to learn how we can support each other. Some people who were planning to set up a nurse group in their area, were able to talk to the nurses who already ran groups and get pointers for what they needed to do."

"There are some elements of project work that I do not have experience in, so I found the project work we did in the workshops invaluable to avoid falling at the first hurdle. I learned there are templates you can use to help set your project up."

"I would recommend anyone to go to these workshops, especially if you want to make changes in practice," says Carla.

The next Respiratory Leaders' event called "*Creating your case for change and getting it heard*" is on 5-6 June 2015, Lea Marston Hotel, Sutton Coldfield with a second workshop called "Delivering value for patients and demonstrating outcomes" to be held on 9-10 November 2015 .

Exclusively for PCRS-UK members only, **registration is available** at:
https://www.pcrs-uk.org/respiratory-clinical-leadership-workshop

PCRS-UK Affiliated Groups - A powerful tool for education and professional development, camaraderie and local support

Carol Stonham, *PCRS-UK Nurse Lead* and **Tricia Bryant** *PCRS-UK Operations Director*

Working in primary care can, at times, feel quite lonely and isolating. With the ever-present pressure from additional bureaucracy as well as demands to see more and more patients, many of whom have complex medical problems, there just aren't enough hours in the day to keep up to date or just take time to enjoy our jobs.

That's where PCRS-UK affiliated local groups come in. They offer a lifeline for nurses and other healthcare professionals enabling them to stay in touch, network with colleagues, learn about clinical issues, and, moreover, offer a welcome chance for some fun and camaraderie.

With 47 PCRS-UK affiliated local groups – there may be a group near you that you could attend and support. Visit our website at https://www.pcrs-uk.org/civicrm/google-mapping?reset=1 to find out if there is an affiliated group near you.

Local Groups offer a great opportunity to share topical information in a comfortable, supportive environment where participants can learn and share experiences. You don't have to be an expert in respiratory medicine to start a group, nor a senior member of the healthcare team; all you need is a passion for delivering the best possible care for your patients and a desire to support your colleagues. You can always enlist the help of a friend or two, which will make the idea less daunting and more fun - and of course PCRS-UK is here to help you …

> *"Our educational events are as much entertaining as they are informative."*
>
> **Robin Carr, Affiliated Group Lead, Oxfordshire**

Simply armed with your copy of *Primary Care Respiratory Update* (*PCRU*) you can develop a short evening programme themed around the key articles in *PCRU*. For example, in this issue, being the height of the pollen season, we have an article by Steph Wolfe on managing allergy and rhinitis and an educational item offering a practical approach to managing exercise-induced asthma in children and adults both of which would make great discussion topics

at your group meetings where you can share your experiences and tips on managing these situations. There is also an update on what has been published in recent respiratory journals and the latest policy news so that you can provide an update to your group.

PCRS-UK has a wealth of other tools which you can use as a base for your meeting content. How about going through one of our practice improvement sheets with a view to getting each member of your group to take these small steps to helping improve respiratory care locally? Our new worksheet addresses the issues raised in the National Review of Asthma Deaths (NRAD) report and offers some great tips for finding patients at high risk of an asthma attack and advice on how to undertake a good asthma review. See also our other PCRS-UK tools such as opinion sheets and checklists https://www.pcrs-uk.org/primary-care-respiratory-resources. In no time at all, your group could be submitting a poster for our national conference on how you tackled asthma issues locally!

> *"The practice nurses really appreciate the help it provides in keeping practice up to date and exchanging ideas with other nurses"*
>
> **Melissa and Sarah, Leeds Respiratory Network**

Running a PCRS-UK affiliated local group does not have to cost the earth. Often you can use one of the local larger practices' meeting rooms as a venue or your local post-graduate medical centre might be able to support you. Additionally, your local pharmaceutical representatives may be able to help fund your meetings – PCRS-UK offers guidance for affiliated groups on the funding of meetings. Log-in to the PCRS-UK website and visit https://www.pcrs-uk.org/resource-pack-help-you-get-started for more information.

With the advent of revalidation and appraisal, as outlined by the Nursing and Midwifery Council (http://www.nmc.org.uk/standards/revalidation/), there has never been a more important time for nurses, in particular, to look at innovative ways in which they can ensure their practice is up to date and support their continuing professional development including reflection on their clinical practice. Affiliated groups can help nurses to prepare for revalidation and provide a discussion forum for nurses and other healthcare professionals.

Affiliated groups are not just for nurses. You can make them as multidisciplinary as you like. Why not, for example, invite your health care assistants, respiratory physiotherapists, local community pharmacists to get involved? And don't forget the GPs and GP registrars.

The PCRS-UK is here to help you. We can provide "buddies" to support you while you establish your group, talk you through what needs to be done and share ideas. Our 'FAQ' and other resources available via our website offer advice and information on planning

"Despite having worked as a nurse for many years I found working in general practice quite isolating; in one way I welcomed the autonomy but in another I lost some of my confidence in decision making. I think this was due to the limited opportunity for peer review and clinical reflection. Attending a nurse leaders' event helped me to regain that confidence in my abilities - but more than that it led me to seek out other nurses in my area who had been experiencing the same issue. Once we came together as a network / affiliated group we were able to support each other and general practice felt a lot less lonely"

Ren Lawlor, London

local meetings and we run an exclusive annual event for leaders of PCRS-UK affiliated groups and those interested in setting up an affiliated group. This year's conference to be held on 15 October 2015 will feature keynote sessions on:

- Making the case for respiratory training
- Getting your voice heard
- Revalidation and appraisal

There will also be clinical updates and real examples on how you can keep your group motivated.

If there is no affiliated group in your area, why not consider contacting another group leader to discuss what's involved and how you might go about it. You can contact any of the group leaders directly using the PCRS-UK members' directory (https://www.pcrs-uk.org/directory). Affiliated group leaders are identified by the symbol shown here. Alternatively, contact Tricia at 01675 477600 for more information and/or to attend a meeting.

AFFILIATE YOUR GROUP TO PCRS-UK

Affiliation is FREE and offers enhanced credibility to the group as well as offering FREE membership to the leader of the group providing you with access to ALL PCRS-UK programmes, resources and tools.

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PERSPECTIVE

Practical approach to managing exercise-induced asthma in children and adults

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1. A child who is wheezing during school sports lessons

Clinical scenario

A 10 year-old girl visits your practice. Her mother is worried about the child's asthma, as it has been causing symptoms every time the girl is doing Physical Education (PE) in school. The mother suggests that "because she is constantly wheezing when she runs, she should have a note from you excusing her from PE". Reviewing the clinical records you realise her asthma has not been reviewed for nearly 18 months. Her current prescription is for fluticasone 100mcg twice-daily, and salbutamol as required.

This case is interesting, because, on the face of it, it's about a child with asthma made worse by exercise, which is a common phenomenon. However, true exercise-induced asthma, where symptoms only occur in response to physical activity, is relatively uncommon. The mistake to make in this consultation would be to concentrate exclusively on the exercise-induced symptoms whereas, in reality, the situation encompasses many of the important general themes that are current in asthma care across most societies.

Firstly, this is a call to return to the basics of asthma management. If her asthma hasn't been reviewed for 18 months, then she had a diagnosis made when she was no older than 8½ years of age. Although there is published evidence that spirometry can be accurately assessed from age 5 years onward,[1,2] in real-life practice objective measurement of lung function using spirometry or peak expiratory flow (PEF) monitoring is difficult in young children. It is worth reviewing how the diagnosis was made – whether she had a positive response to treatment that was sustained over time, and whether withdrawal of her inhaled corticosteroid (ICS) led to a return of symptoms.[3] In addition, family and personal history of atopy, and the presence of characteristic diurnal symptoms, any deterioration in response to viral, irritant or allergic triggers, and the presence of high pitched rhonchi (or wheeze) on auscultation whilst symptomatic would be useful pointers to a diagnosis of asthma.[4-6]

In addition to reviewing the diagnosis, this consultation is an opportunity to check both her concordance with therapy (cross referencing her statements with her prescription records) and her inhaler technique.

The clinical difficulty now is that our patient is established on regular ICS therapy, making it much more difficult to demonstrate obstructive lung function or diurnal variation, or indeed a fall in PEF in response to triggers. Nonetheless, she should be taught how to use a PEF meter, checking her technique and her understanding of how to document the result, and she should be asked to keep a record for a minimum of two weeks, including not only morning and evening pre-bronchodilator recordings, but also any recordings when symptomatic, particularly relating to exercise. Ideally we should obtain a post-bronchodilator (20-30 minutes) reading following on from an exercise-induced fall in value. A change of 12% would be significant,[7] although it is worth noting that a failure to bronchodilate does not exclude asthma.[8]

Another way of establishing exercise-induced symptoms and bronchoconstriction would be to arrange a supervised exercise session (for example in the surgery or pulmonary function laboratory), using either a simple step, or the more complex incremental shuttle walk/run. Ideally, this should take place in a safe environment, where a deterioration in the girl's condition can be monitored and treated.[9] Breathing cold air (never difficult to arrange in the North East of Scotland!) is likely to result in even more effective bronchoconstriction.

Ninety percent of people with asthma are affected by exercise, and exercise induces asthma symptoms in 35-45% of people with allergic rhinitis. Even when these two patient groups are excluded, however, there is still a 3-10% incidence of exercise-induced asthma in the general population.[10] This distinction is important when it comes to treatment. In a true case of isolated exercise-induced asthma, it is reasonable to prescribe only a short acting β_2-agonist, taken (where possible) in anticipation of the event, or to relieve symptoms. Where more conventional asthma is being triggered by exercise, a formal assessment of asthma control using a validated tool such as the Children's Asthma Control Test[11-13] will help guide treatment choices. Exercise bronchodilation can then be superimposed onto this regime.

In our patient, there may be a role for giving her a long-acting

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β_2-agonist (LABA) in combination with her ICS,[14] as this may negate or at least reduce her need for 'anticipatory' reliever therapy. In addition, a 10-year old is likely to be engaging in sporadic unplanned exercise, where pre-exercise bronchodilation is impractical. Leukotreine receptor antagonists (LTRAs) have also been shown to have a role in exercise-induced asthma,[15] and may help to combat the late bronchoconstriction response so characteristic of this condition.

Onward referral of this child would be unusual, and would only be indicated where there was diagnostic doubt or there was failure to respond to therapy beyond a total daily ICS dose of 800mcg of beclometasone equivalent.[16,17]

There is of course another dimension to this case. Adolescents with asthma bring with them their own special range of problems.[18] The role of the school – and in particular her PE teacher – is important, and their understanding of asthma may need to be explored and improved, particularly around access to medication. There are a range of tools that can help to do this,[19,20] and engaging with schools has been shown to result in improved asthma outcomes for children.[21] All too often, it remains the case that children have difficulty accessing their medication, a problem that can be amplified on the playing field or playground, with teachers considering that children (particularly girls) are using their asthma and its symptoms as an excuse to avoid games or sports. Children are often reluctant to take their inhalers in public,[22] and it may be that forms of exercise that are known to be safe (such as swimming[23]) could be encouraged. This would help to avoid the withdrawal from exercise that this girl requests and which should be resisted.

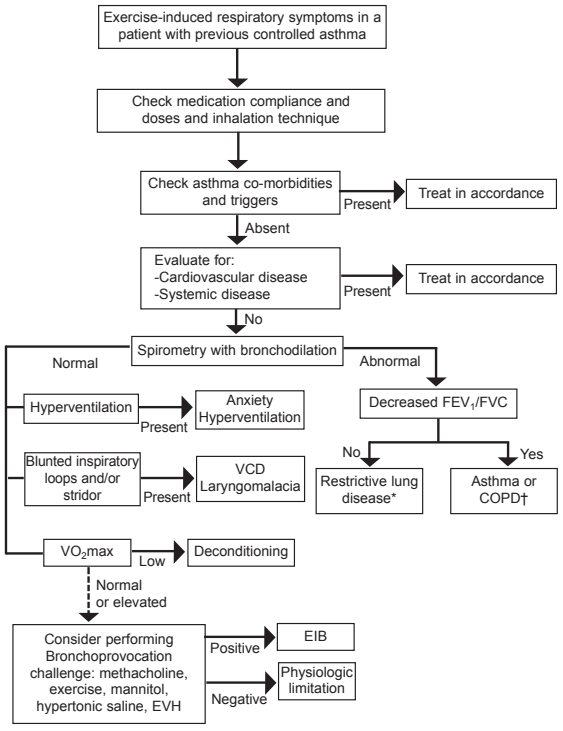
2. An adult who is breathless on walking

Clinical scenario

A 52 year-old man has booked an appointment with you. He is worried about his asthma, as it has been causing more symptoms than usual for the last few months. He has been trying to follow your recommendation about losing some weight and keeping fit by walking for 45 minutes a day.
He wants to continue his exercise, "now that I have got used to it and have really started to enjoy my daily routine", but he is quite often breathless and wheezing after 15-20 minutes.
You confirm that he has been seeing you regularly for the last year: every 3rd or 4th month.
He is overweight, but not obese and his asthma has been well under control with budesonide 200 mcg twice daily. There have been no new health problems that you know about.

Regular physical exercise and participation in sports are considered to be important components of a healthy life and are recommended for all individuals. However, in patients with asthma, physical exertion is one of many stimuli that can produce episodes of airway obstruction. Physical training improves cardiopulmonary fitness and improves health-related quality of life among people with asthma,[24]

Figure 1. Algorithm of approach and diagnosis of this case-scenario



COPD: Chronic obstructive pulmonary disease; EVH: Eucapnic voluntary hyperpnea; FEV_1: Forced expiratory volume in the 1st second; FVC: forced vital capacity; VCD: Vocal cord dysfunction; VO_2max: maximal oxygen consumption/uptake.
*Confirm with pletismography for lung volumes and carbon monoxide diffusing capacity (DLCO).
† Differentiate by positive bronchodiltation, history of smoking.

but the worsening of asthma symptoms during exercise can discourage them from playing sports or attempting to keep fit. Therefore, healthcare professionals must make every effort to treat exercise-induced symptoms in order to enable patients to participate in regular exercise without fear of exacerbating symptoms.

Assessment

The new onset of exercise-induced bronchoconstriction in a patient with previously controlled asthma is a sign of loss of control,[25] which should promptly lead to consideration of several possibilities. First of all, co-morbidities, such as gastro-oesophageal reflux, rhinosinusitis, recent weight gain, cardiovascular conditions, and respiratory infections should be ruled out or treated appropriately. Triggers, including psychological stress, smoking habits, possible allergens and irritants in the sports venue, and changes in occupational environment, must be identified and medication compliance and inhaler technique checked. Also, the presence of other characteristics of uncontrolled asthma should be assessed, such as other daytime symptoms, the need for reliever medication and nocturnal awakenings. Figure 1 presents an algorithm for

Table 1. Drugs most frequently used to treat exercise-induced asthma (adapted from Carlsen,[37])

Drug	Type	Notes
Inhaled corticosteroids	Controller	Presently the most important treatment available. Inhaled steroids with least side effects, especially lack of adrenal suppression may be particularly suited for athletes.
Anti-leukotrienes (Receptor antagonists and 5-LO inhibitors)	Controller	Montelukast protects against exercise-induced asthma without the development of tolerance. Some patients are non-responders to anti-leukotrienes, and the effect should be monitored through follow-up.
Cromones	Controller	More effective than inhaled anti-cholinergics at attenuating exercise-induced bronchoconstriction, but less than short-acting β_2-agonists
Inhaled beta2-agonists	Reliever	**Short-acting**: Useful for pretreatment before exercise and for reliever treatment of dyspnoea. Tolerance may develop with regular use. **Long-acting**: Useful for uncontrolled exercise-induced asthma both in schoolchildren and adolescents. Regular use may cause the development of tolerance. Should not be used without concomitant inhaled corticosteroids.
Inhaled anti-cholinergics	Reliever	May be particularly useful in elite athletes due to possible cholinergic involvement in pathogenesis.

diagnosing exercise-induced symptoms.

What is exercise-induced asthma in adults?

Exercise-induced asthma is defined as lower airway obstruction and respiratory symptoms induced by exercise in patients with underlying asthma.[26] Physical activity is, in fact, the second leading cause of airway constriction in people with asthma.[27] However, even in a patient with known asthma, who presents with exercise-induced symptoms, other causes need to be considered. Appropriate management relies on correct and prompt diagnosis (see Figure 1).

How to diagnose exercise-induced asthma in adults?

Exercise-induced asthma causes dyspnoea (a sensation of discomfort when breathing) which typically develops 5-10 mins after exercise (it rarely occurs during exercise), increased effort or work to breathe, chest tightness, shortness of breath, air hunger, wheezing, or cough. It is, in fact, uncommon in subjects who complain of exercise-induced dyspnoea.[28] In the specific case of our clinical scenario, it is important to bear in mind that exercise-induced dyspnoea is very common in overweight/obese patients,[29-31] and asthma is more difficult to control in this population.[25]

However, the diagnosis of exercise-induced asthma cannot be determined accurately on the basis of self-reported symptoms without objective lung function tests, and therefore confirmation with standardised testing using spirometry with bronchodilation and/or bronchial challenges is strongly recommended.

How to treat? What drug treatment (if any) would you recommend?

When only intermittent symptoms are present, as-needed reliever medication is suitable. As monotherapy, however, this option should be reserved for patients with occasional daytime symptoms of short duration only related to exercise.[25] Short-acting β_2-agonists are effective in reversing exercise-induced asthma. Their efficacy is optimal approximately 20 minutes after inhalation and wanes within a few hours. They are also used pre-exercise for prevention.

The primary strategy for managing exercise-induced asthma is to prevent it, and prophylaxis includes not only premedication but also some non-pharmacological interventions, including allergen avoidance when possible. Warm-up of 10 to 15 minutes, including stretching exercises with an objective of reaching 50% to 60% of maximum heart rate, should be encouraged, as well as cool-down exercises. This strategy may be helpful in preventing or minimising exercise-induced symptoms.[32] Exercise-induced asthma may occur in any climatic condition, but it is more common when the patient is breathing dry, cold air than in hot, humid climates.[25] For exercising in cold air, a mask that facilitates warming of inhaled air can be used. Breathing through the nose may allow humidifying and warming of cool dry air, which raises the importance of treating concomitant rhinitis. Though patients with asthma should not be limited in the sports they choose, selecting a sport based on its low asthmagenic potential may decrease symptoms.[33]

According to GINA guidelines, the presence of symptoms with exercise is a marker of poor asthma control indicating a need for additional controller medications such as inhaled corticosteroids or anti-leukotrienes.[25] Table 1 summarises currently available drugs for exercise-induced asthma.

For the patient in this particular case-scenario, who was already on ICS, the strategy could be to increase the dose, or add a LABA, or add an LTRA. The latter two drugs have proven effect in preventing exercise-induced asthma and montelukast also improves rhinitis. Underlying rhinitis should be assessed and treated,[34] including allergen avoidance when possible, pharmcotherapy and potentially immunotherapy in patients with specific allergies.[25] If treatment fails, the diagnosis should be reconsidered.

When should we consider referral for specialist advice?

Patients with difficult to control exercise-induced asthma, those performing sports at elite level of competition and those in whom the diagnosis is doubtful should be referred to a specialist. At any time, attention should be paid to the World Anti-doping Agency list of prohibited substances when prescribing drugs for patients within

a competing level of sport.[35] Also, the incorrect use of LABAs without ICS must be avoided at all times, a situation that has been highlighted recently as a matter of concern in athletes.[36]

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References

1. Bacharier LB, Strunk RC, Mauger D, White D, Lemanske Jr RF, Sorkness CA. Classifying asthma severity in children: Mismatch between symptoms, medication use, and lung function. *Am J Respir Crit Care Med* 2004;**170**:426-32. http://dx.doi.org/10.1164/rccm.200308-1178OC
2. Brouwer AFJ, Roorda RJ, Brand PLP. Home spirometry and asthma severity in children. *Eur Respir J* 2006;**28**:1131-7. http://dx.doi.org/10.1183/09031936.06.00118205
3. Bush A. Diagnosis of asthma in children under 5. *Prim Care Resp J* 2007;**16**:7-15. http://dx.doi.org/10.3132/pcrj.2007.00001
4. Castro-Rodriguez JA, Holberg CJ, Wright AL, Martinez FD. A clinical index to define risk of asthma in young children with recurrent wheezing. *Am J Respir Crit Care Med* 2000;**162**:1403-06.
5. Ly NP, Gold DR, Weiss ST, Celedon JC. Recurrent wheeze in early childhood and asthma among children at risk for atopy. *Pediatrics* 2006;**117**:e1132-8. http://dx.doi.org/10.1542/peds.2005-2271
6. Kurukulaaratchy RJ, Matthews S, Holgate ST, Arshad SH. Predicting persistent disease among children who wheeze during early life. *Eur Respir J* 2003;**22**:767-71. http://dx.doi.org/10.1183/09031936.03.00005903
7. Pellegrino R, Viegi G, Brusasco V, *et al*. Interpretative strategies for lung function tests. *Eur Respir J* 2005;**26**:948-68. http://dx.doi.org/10.1183/09031936.05.00035205
8. Dundas I, Chan EY, Bridge PD, McKenzie SA. Diagnostic accuracy of bronchodilator responsiveness in wheezy children. *Thorax* 2005;**60**:13-16. http://dx.doi.org/10.1136/thx.2004.029934
9. Abu-Hasan M, Tannous B, Weinberger M. Exercise-induced dyspnea in children and adolescents: if not asthma then what? *Ann Allergy Asthma Immunol* 2005;**94**:366-71. http://dx.doi.org/10.1016/S1081-1206(10)60989-1
10. Hough DO, Dec KL. Exercise-induced asthma and anaphylaxis. *Sports Med* 1994;**18**:162-72. http://dx.doi.org/10.2165/00007256-199418030-00003
11. Juniper EF, Bousquet J, Abetz L, Bateman ED. Identifying ‚well-controlled' and 'not well-controlled' asthma using the Asthma Control Questionnaire. *Respir Med* 2006;**100**:616-21. http://dx.doi.org/10.1016/j.rmed.2005.08.012
12. Juniper EF, O'Byrne PM, Guyatt GH, Ferrie PJ, King DR. Development ?and validation of a questionnaire to measure asthma control. *Eur Respir J* 1999;**14**:902-07. http://dx.doi.org/10.1034/j.1399-3003.1999.14d29.x
13. Juniper EF, Svensson K, Mork AC, Stahl E. Measurement properties and interpretation of three shortened versions of the asthma control questionnaire. *Respir Med* 2005;**99**:553-8. http://dx.doi.org/10.1016/j.rmed.2004.10.008
14. Medicines and Healthcare products Regulatory Agency. *Long-acting b2 agonists for asthma: review*. 2008. Available from: http://www.mhra.gov.uk/%20Safetyinformation/DrugSafetyUpdate/CON084710 (accessed December 2012)
15. Weiler JM, Anderson SD, Randolph C for the Joint Task Force on Practice Parameters, representing the American Academy of Allergy, Asthma and Immunology; the American College of Allergy, Asthma and Immunology; and the Joint Council of Allergy, Asthma and Immunology. *Pathogenesis, prevalence, diagnosis and management of exercise induced bronchoconstriction; a practice parameter.* Available from http://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Practice%20and%20Parameters/Exercise-induced-bronchoconstriction-2011.pdf (accessed December 2012)
16. NHS Quality Improvement Scotland. *Asthma services for children and young people clinical standards, 2007*. http://www.healthcareimprovementscotland.org/previous_resources/standards/asthma_services_for_children_a.aspx (accessed December 2012)
17. Haughney J, Small I, Davison H, Kohli HS. Standards for children with asthma in Scotland. *Prim Care Resp J* 2007;**16**:205-06. http://dx.doi.org/10.3132/pcrj.2007.00057
18. Stearn R. *Asthma in Adolescents*. Opinion sheet 48. 2011 Available from http://www.pcrs-uk.org/opinions/os48_asthma_adol.pdf (accessed December 2012)
19. Forrest J, Beaton L. *A study guide on Children's Health* Scottish Executive Education Department 2002. Available from http://www.scotland.gov.uk/Publications/2002/07/15075/8616 (accessed December 2012)
20. Asthma UK. *Out there and Active* Available from http://www.asthma.org.uk/about-asthma/living-with-asthma/out-there-active-campaign/ (accessed December 2012)
21. Henry RL, Lough S, Mellis C. National policy on asthma management for schools. *J Paediatr Child Health* 2006;**42**:491-5. http://dx.doi.org/10.1111/j.1440-1754.2006.00928.x
22. Cordina M, McElnay JC, Hughes CM, Fenech AG. Health-related issues of importance to school children with asthma - a qualitative study. *J Soc Adm Pharm* 2002;**19**:162-69.
23. Font Ribera L, Villanueva CM, Nieuwenhuijsen MJ, Zock J-P, Kogevinas M, Henderson J. Swimming Pool Attendance, Asthma, Allergies, and Lung Function in the Avon Longitudinal Study of Parents and Children Cohort. *Am J Respir Crit Care Med* 2011;**183**:582-8. http://dx.doi.org/10.1164/rccm.201005-0761OC
24. Chandratilleke MG, Carson KV, Picot J, Brinn MP, Esterman AJ, Smith BJ. Physical training for asthma. *Cochrane Database Syst Rev* 2012;**5**:CD001116.
25. Global Initiative for Asthma (GINA). Global Strategy for Asthma Management and Prevention. 2011; Available from: http://www.ginasthma.org/ (accessed December 2012)
26. Bousquet J, Clark T, Hurd S, *et al*. GINA guidelines on asthma and beyond. *Allergy* 2007;**62**:102-12. http://dx.doi.org/10.1111/j.1398-9995.2006.01305.x
27. McFadden Jr ER. Approach to the Patient with Exercise-Induced Airway Narrowing. In: Adkinson Jr NF YJ BW, *et al*, editor. Adkinson: Middleton's Allergy: Principles and Practice. 7th ed. Philadelphia: Mosby; 2008
28. Weiss P, Rundell KW. Imitators of exercise-induced bronchoconstriction. *Allergy Asthma Clin Immunol* 2009;**5**:7. http://dx.doi.org/10.1186/1710-1492-5-7
29. Gibson GJ. Obesity, respiratory function and breathlessness. *Thorax* 2000;**55** Suppl 1:S41-4. http://dx.doi.org/10.1136/thorax.55.suppl_1.S41
30. Babb TG, Ranasinghe KG, Comeau LA, Semon TL, Schwartz B. Dyspnea on exertion in obese women: association with an increased oxygen cost of breathing. *Am J Respir Crit Care Med* 2008;**178**:116-23. http://dx.doi.org/10.1164/rccm.200706-875OC
31. Sin DD, Jones RL, Man SF. Obesity is a risk factor for dyspnea but not for airflow obstruction. *Arch Intern Med* 2002;**162**:1477-81. http://dx.doi.org/10.1001/archinte.162.13.1477
32. Couto M, Moreira A, Delgado L. Diagnosis and treatment of asthma in athletes. *Breathe* 2012;**8**:286-96.
33. Weiler J, Bonini S, Coifman R, *et al*. American Academy of Allergy, Asthma & Immunology Work Group report: exercise-induced asthma. *J Allergy Clin Immunol* 2007;**119**:1349-58. http://dx.doi.org/10.1016/j.jaci.2007.02.041
34. Silva D, Moreira A, Delgado L. Allergic Rhinitis and Sports. In: Kowalski ML, editor. Allergic Rhinitis: InTech; 2012
35. World Anti-doping Agency. List of Prohibited List of Prohibited Substances and Methods. Updated annually and available from http://www.wada-ama.org/ (accessed January 2013)
36. Couto M, Horta L, Delgado L, Capão-Filipe M, Moreira A. Impact of Changes in Anti-Doping Regulations (WADA Guidelines) on Asthma Care in Athletes. *Clin J Sport Med* 2012; [Epub ahead of print]
37. Carlsen K.-H., Carlsen K. L. Physical exercise, training and sports in asthmatic children and adolescents. *European Respiratory Society Monographs* 2012;**56**:49-58. http://dx.doi.org/10.1183/1025448x.10016210

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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. Poster 2805 presented at the European Respiratory Society International Congress, 2014. **3.** Plusa T, Bijoś P. Poster 2807 presented at the European Respiratory Society International Congress, 2014. Teva Pharmaceuticals Europe BV, Piet Heinkade 107, 1019 GM Amsterdam, The Netherlands.

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

Teva UK Limited, Ridings Point, Whistler Drive, Castleford, West Yorkshire, WF10 5HX.

*DuoResp Spiromax is licensed for use in adults 18 years of age and older only.

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