

# Primary Care Respiratory **UPDATE**



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inhaler technique

Building blocks of a good  
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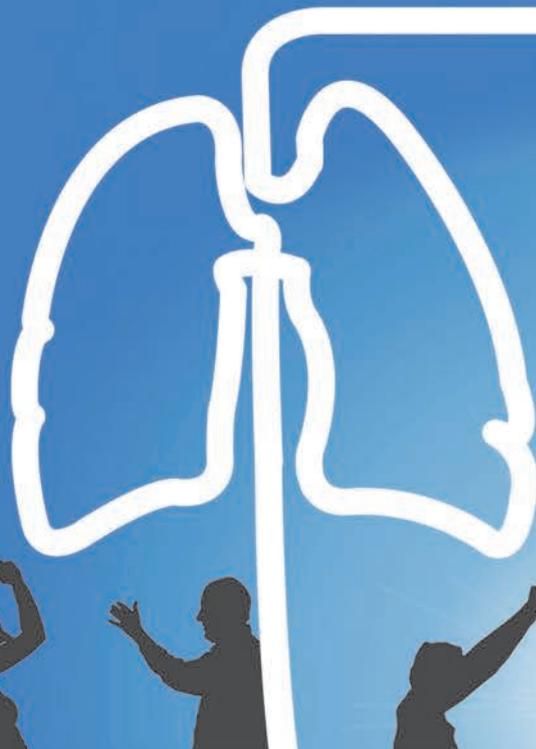
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# Primary Care Respiratory UPDATE

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## SPECIAL PULL-OUT FEATURE

**The building blocks of a good asthma or COPD review in adults**

# Guest Editor's Round Up

Ruth Thomas



Reducing the financial burden on the NHS is essential within the current economic climate and good care is cost-effective. NRAD highlights the devastating impact of poor asthma care, and along with ongoing evidence of poor quality spirometry, inaccurate registers of both asthma and COPD, over and under-prescribing within these diseases and late diagnosis of lung cancer demonstrate poor care is expensive and has negative impacts on our patients. The key theme for this issue is getting the basics of management right, and education and training of clinicians to be able to deliver good quality care. Education and professional development leads to improved management, accurate diagnosis and better patient outcomes. Keeping patients at the centre of their care is essential and Jane Scullion reports upon how PCRS-UK has set up a new Lay Reference Group which will provide a patient-centred perspective and contribute to the society's existing and future policies and plans.

Stephen Gaduzo in his Chair Perspective discusses the five PCRS-UK campaigns which are the main drivers for its future vision. He notes that nurses may be delivering care without adequate training and GPs may need to upskill to improve their diagnostic skills: a theme that is continued in more detail in later articles. Furthermore as many GPs and nurses are approaching retirement in the near future, and there is a climate in which few doctors want to come into general practice and many nurses lack sufficient knowledge and skills to deliver good care in long-term conditions planning and ensuring clinical staff are kept up-to-date and appropriately trained has never been more important.

The launch of the PCRS-UK Academy which has been developed through partnership with

PCRS-UK and Cogora (publishers of *Nursing in Practice*, *Pulse* and *Pulse Learning*) and funded by Pfizer to offer free, high quality, independent education through the provision of 20 regional workshops around the country, monthly newsletters, and on-line modules which have been designed for clinicians with busy schedules. CPD certification is available for all of the Academy activities. Linking with Cogora increases accessibility to 220,000 health care professionals, improving the profile of the PCRS-UK, and perhaps enables the five campaigns previously mentioned to be truly successful. The PCRS-UK website will also soon be updated and supports clinicians through the provision of resources, networking and supporting its affiliated respiratory groups.

Improving care across regions is possible. This issue also demonstrates how a forward thinking CCG has provided trust-wide education on COPD and spirometry to standardise care and upskill all their practice nurses. An inspirational article on how audit can aid both individual clinicians and improve care within a service is described by Noel Baxter who shares the 'Good asthma pyramid' improvement project developed by Lambeth and Southwark Integrated Respiratory Team. The centre fold -pull out 'The building blocks of a good asthma or COPD review in adults' provides the basics for delivering a structured approach to reviews.

Finally the *npj Primary Care Respiratory Medicine* as always provides a variety of interesting, relevant articles to keep us up-to-date, including a study from Boland et al exploring barriers and variation in implementing a COPD disease management programme.

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and throat, hoarseness/dysphonia, throat irritation, pneumonia, bronchitis, hypokalaemia, sinusitis, contusions, traumatic fractures, arthralgia, myalgia, muscle cramps. **Uncommon:** respiratory symptoms (dyspnoea), anxiety, tremor, palpitations, tachycardia, angina pectoris, atrial fibrillation, cutaneous hypersensitivity reactions, hyperglycaemia, sleep disorders, cataract. **Rare:** angioedema, respiratory symptoms (bronchospasm), anaphylactic reactions including anaphylactic shock, Cushing's syndrome, cushingoid features, adrenal suppression, growth retardation in children and adolescents, decreased bone mineral density, oesophageal candidiasis, behavioural changes including psychomotor hyperactivity and irritability, glaucoma, cardiac arrhythmias and paradoxical bronchospasm. **Not known:** depression or aggression. **Paradoxical bronchospasm:** substitute alternative therapy. **Legal category:** POM. **Presentation and Basic NHS cost:** AirFluSal Forspiro 50/500 60 inhalations. £32.74. **Product Licence (PL) no:** PL 04416/1431 **PL holder:** Sandoz Ltd, Frimley Business Park, Frimley, Camberley, Surrey. GU16 7SR. **Last date of revision:** October 2015.

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# Chair's perspective: Implementing our new direction

**Stephen Gaduzo**, *PCRS-UK Executive Chair*



Having set ourselves a new direction following a strategic review last year, the five campaigns that represent our vision for the future are now the major drivers of all our activities.

They will underpin our communications, the way we influence policy, plan the annual conference, provide education, run respiratory leaders' events and support our affiliated groups.

Our main focus now is effectively to implement these campaigns. The emphasis will be on applying evidence based knowledge and ensuring that good practice becomes a routine part of everyday care.

The five campaigns fit neatly together and have been designed to galvanise the support of members and bring about change.

In brief, the campaigns cover:

- Ensuring early and accurate diagnosis as the basic building block of care
- Establishing tobacco dependency as a long term condition that starts in childhood
- Improving the education and training of health care professionals to enable them to provide better care
- Structuring care so that we make the most of available time and resources
- Getting research into practice: ensuring guidelines and evidence based practice are routinely implemented in clinical practice

The first two campaigns are about changes we want to bring about in "what" clinicians do and how they think about day to day practice. Diagnosis as the basic building block of quality care will primarily be a health professional education campaign designed

to both change culture – "diagnosis matters" and improve skills and competency to ensure early and accurate diagnosis. The second campaign is about transforming how we think about smoking cessation and will push for tobacco dependency to be seen as a long term condition in its own right that typically starts in childhood, follows a relapsing trajectory and deserves attention as a mainstream component of healthcare. We want every health-care professional to understand what they can do help patients to address their dependency on tobacco - and ultimately to stop smoking permanently.

There are two key themes of the Education campaign. The first, "Better education better care" will raise awareness of the need for the workforce to have proper training and for money and time to be invested in good education. The second, "Be trained to do the job you do" aims to empower and support health professionals to seek the training they need.

The "Structure of care" campaign - making the most of available time and resources - recognises just how hard pressed and busy we are as primary care clinicians. During 2016 we will be providing tips and advice to help practitioners to work smarter and more efficiently and to make better use of the limited time we have in contact with patients to maximise outcomes. The building blocks for asthma and COPD review, set out in this issue's pull-out, are an example of how clinicians can make efficient use of the time they have available.

The "Getting research into practice" campaign will be about influencing research and guideline development processes in such a way that the implementation aspects are taken much more seriously. In other words, in addition to guideline developers looking at evidence on the effectiveness of interventions, we will be encouraging them to ask for and to report evidence on how an intervention can

most effectively be implemented in routine care. Supported self-management, particularly in asthma, stands out as an intervention which is poorly implemented despite clear evidence that it works. There is, however, a significant literature on effective implementation strategies from which we can learn. For these reasons we are now looking at 'supported self-management' as an additional priority campaign.

Each issue of *Primary Care Respiratory Update* will link to one of the campaigns. Education, is featured in this issue and is really crucial because we know there are nurses in practice who are being expected to work at a certain level without the necessary training. Upskilling GPs is also necessary in order to help them to improve their diagnostic and management skills.

Keeping yourself up to date gives you the confidence to look critically at your practice and modify it to ensure you are providing the best, evidence based care. As an example, an audit in my practice recently showed us were doing better than we thought with flu jabs and smoking cessation but we were not referring enough people to pulmonary rehabilitation and had too many people on triple therapy.

This brings me to the launch of our new Primary Care Respiratory Academy which is

an exciting new opportunity enabling us to take the educational support we offer to a new level. We have partnered with Cogora, publishers of *Pulse*, *Pulse Online* and *Nursing in Practice*, to set up the Academy which will provide free, independent, high-quality respiratory education. You can read more about the Academy in this issue.

I was part of the small group responsible for the development of the new PCRS-UK website due to be launched shortly. My vision is that the new site will make it easy to find the latest news/information and to search for the material you need.

Patients remain at the centre of everything that we do and to keep us focused on this ethos we have set up a Lay Patient and Carer Reference Group. This group will act as a vital check to ensure that PCRS-UK embeds a patient centred approach in all its activities. An article in this issue explains more about this new venture.

Finally we continue to see our affiliated groups as a great strength of PCRS-UK providing support to practitioners at a local level. We have boosted the support available from PCRS-UK for local groups:

- We can help you promote your events and local meetings via emails to members in your area; simply contact us at [info@pcrs-uk.org](mailto:info@pcrs-uk.org)
- We can add your events to our event listing on the website; send us the details and we'll action it
- We can provide networking opportunities and buddy support to those who are new to running a group or provide a conduit for group leaders to share tips on how to regain the enthusiasm for groups that are struggling
- We can suggest relevant resources from PCRS-UK materials to support the meetings you are running through our new search facility
- And don't forget our group resource pack to help you run your meetings – see <https://www.pcrs-uk.org/resource-pack-help-you-get-started>

We have made great strides in implementing our new direction since our strategic review a year ago. The campaigns, working with new partners such as Cogora, and the modernisation of the website will strengthen PCRS-UK and boost our authority as an influential voice of primary care in respiratory medicine.

As my time as PCRS-UK Chair draws to a close I feel proud to have been involved in these reforms whose aims are primarily to support grass roots practitioners to raise standards of patient care.



## 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](http://www.blf.org.uk/COPD)**
- A range of leaflets and booklets for your patients: **[www.blf.org.uk/publications](http://www.blf.org.uk/publications)**
- COPD patient passport available in print and online: **[www.blf.org.uk/passport](http://www.blf.org.uk/passport)**

Leading  
the **fight**  
against  
lung disease

## 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](http://www.blf.org.uk/hcp)**

To find out more, please contact:

- **020 7688 5555**
- **[enquiries@blf.org.uk](mailto:enquiries@blf.org.uk)**

# Primary Care Respiratory Society launches PCRS-UK Respiratory Academy

## Fran Robinson reports on the exciting new educational resource brought to you by a partnership between PCRS-UK and Cogora



**Francesca Robinson**, *PCRS-UK Communications Consultant*

PCRS-UK is pleased to announce the launch of the Primary Care Respiratory Academy, an exciting new educational resource for primary care and community health professionals.

The Academy, which offers free, independent, high-quality respiratory education programme, has been developed through a partnership between PCRS-UK and Cogora (the publishers of *Pulse*, *Pulse Learning* and *Nursing in Practice*) and is funded by Pfizer on behalf of the Pfizer Novartis alliance.

### **Why have we linked with an educational partner?**

Reaching out beyond our membership to educate primary care health professionals is a key charitable aim of PCRS-UK. However, we currently reach only a small proportion of primary care health professionals in the UK and do not have the online capabilities or marketing resources to extend more widely in what is a competitive market.

As part of a strategic review last year the PCRS-UK Executive and Trustees decided that the Society should identify a partner with complementary skills with whom we could combine forces to strengthen our educational offering and increase our impact on improving respiratory care.

We talked informally with a wide range of education providers before putting out a formal request for proposals. We then met with a small number of short-listed organisations.

As a result of this selection process, we have chosen to work with Cogora. Cogora has a portfolio of

market leading publications produced for the primary care community, and has extensive experience of hosting learning events and developing online educational materials.

### **What is the Academy?**

The Academy will provide an online "hub" of educational materials, resources and respiratory news and has launched an outreach programme that includes 20 regional workshops during 2016.

### **Online modules**

The online educational materials will comprise a range of e-CPD modules covering key aspects of respiratory care. They will include both Case-based and Key Questions learning modules suitable for GPs, primary care nurses, community healthcare professionals and pharmacists.

- The Case-based learning modules, based on the latest evidence, will cover a wide range of respiratory-related topics, including patient safety, how to practise efficiently and how to boost knowledge, skills and performance. Written by respiratory experts, the interactive modules will enable practitioners to learn by working through real-life primary care patient scenarios. Practitioners will be assessed before starting a module and again at the end to gauge how their knowledge has improved. Suitable for clinicians with busy schedules, the modules have been designed to be completed in stages enabling clinicians to break off at any point and resume when convenient.
- The Key Questions modules will comprise a respiratory expert answering questions cover-

ing the challenges primary care professionals are likely to encounter in their daily practice.

The first online modules will cover childhood wheeze, breathlessness and allergy.

## **A UK-wide roadshow of full-day, educational events**

Twenty free-to-attend regional events located across the country, from Exeter and Brighton to Cardiff, Glasgow and Aberdeen, provide opportunities not only to update on the latest respiratory guidance but also to explore respiratory care training, communication, partnership and teamwork issues. These one day meetings, facilitated by a multi-disciplinary faculty of PCRS-UK respiratory experts, will consist of plenary presentations in the morning followed by practical, interactive case-based workshops in the afternoon.

The sessions will offer guidance on essential topics and practical tips on how to provide better care for the wide range of respiratory symptoms and diseases seen in primary care, from breathlessness and cough through asthma, COPD, respiratory-related allergies and infections, to less common conditions such as lung cancer and pulmonary fibrosis.

All PCRS-UK Academy activities have been developed via a joint PCRS-UK/Cogora steering group, with clinical input and review provided by PCRS-UK and the production, project management and marketing handled by Cogora. PCRS-UK is responsible for selecting speakers and has editorial control of all the content thereby ensuring its independence and integrity.

## **How will the Academy benefit health professionals?**

All the educational materials will be designed to support the respiratory educational needs of primary care health professionals, complementing PCRS-UK membership activities.

Attending one of the Academy roadshow events and/or completing the online educational modules will provide the whole practice team with an update on the latest evidence-based best practice to enable them to improve patient care. All Academy activities will earn points for CPD certification.

**In the UK the data show we cannot afford to be complacent about providing high quality clinical respiratory care:**

- Every 10 seconds someone has an asthma attack – this number could be reduced<sup>1</sup>
- Two thirds of people with COPD remain undiagnosed<sup>2</sup>
- Respiratory disease is responsible for around 1 million hospital admissions a year. Good respiratory care reduces hospital admissions<sup>3</sup>
- Respiratory disease is the third biggest cause of death in the UK, killing around 80,000 people a year. The death rate for respiratory disease in the UK is the worst amongst OECD (Organisation for Economic Co-operation and Development) nations<sup>3</sup>
- Lung cancer is the most common cause of cancer death in the UK, accounting for more than 1 in 5 cancer deaths<sup>4</sup>
- Nearly 50% asthma deaths could be prevented<sup>5</sup>

Carol Stonham, PCRS-UK nurse lead and nurse practitioner at the Minchinhampton Surgery, Gloucestershire, says: "The great benefit of this educational resource is that it will be free. At the same time it will be very high quality education because it will be led and overseen by experienced PCRS-UK members who not only have a passion for respiratory care but are also practicing clinicians and know the needs of primary care. The training will be relevant, current and evidence-based.

"The Academy offers a variety of styles of learning which is very important for primary care practitioners whose time is precious and who often don't have the luxury of being able to attend workshops. But it's not either/or. People can do the on-line training as stand-alone e-modules at their leisure or they can complete them after going to a workshop to consolidate what they have learned. The learning will be fun – it won't just be read, read, read and regurgitation, the programmes are going to be about interaction and checking your knowledge."

Dr Steve Holmes GP and PCRS-UK Education Lead, says: "The Academy programmes will provide easily accessible, high quality updates that will keep clinicians up to speed with the clinical management of asthma and COPD, and will enable them to improve patient care. There will also be plenty of clinical best practice tips to help clinicians make the best of the short period of time that they have with their patients."

**How will the Academy benefit PCRS-UK?**

Teaming up with Cogora, which has access to a community of 220,000 healthcare professionals, will boost the charitable impact of PCRS-UK, enabling us to reach out to a far wider group of practitioners. Making respiratory education more accessible to all primary care professionals will improve the diagnosis and management of respiratory disease and will help to ensure that evidence-based best practice becomes routine.

“Better education, better care” and “Be trained for the job you do” are key themes of an education campaign we are running throughout 2016 to bring about change and improvements in care. The launch of the Academy plays a key role in helping us to raise the profile of respiratory education. It will also help us to maintain a strong profile as a credible, independent and influential voice of primary care in respiratory medicine.

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**A UK-wide roadshow of full-day, educational events**



You can register for any of the events listed below at <http://www.respiratoryacademy.co.uk/event-registration/>

4 May 2016	Hilton Hotel Glasgow
5 May 2016	Hampton by Hilton, Croydon
10 May 2016	Novotel, Ipswich
12 May 2016	Radisson Blu Cardiff
17 May 2016	DoubleTree by Hilton Chester
19 May 2016	Doubletree by Hilton Aberdeen
26 May 2016	ETC Venues, Birmingham
7 June 2016	Hilton Metropole, Brighton
10 June 2016	Hilton Hotel Gateshead, Newcastle upon Tyne
14 June 2016	Hilton Hotel, Leeds
15 June 2016	Hilton Hotel Southampton
16 June 2016	Hilton Hotel Blackpool
17 June 2016	DoubleTree by Hilton Manchester
21 June 2016	Hilton Hotel Belfast
28 June 2016	Hilton Hotel Nottingham
29 June 2016	Hilton Hotel Liverpool
5 July 2016	Hilton Hotel London Olympia
12 July 2016	Hilton Hotel Bath
13 July 2016	Mercure Rougemont Hotel Exeter
14 July 2016	Hilton Hotel Milton Keynes

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1. Scientific abstracts of original research on any aspect related to respiratory medicine
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# Be trained to do the job you do: our campaign for better education

## Fran Robinson reports on the PCRS-UK campaign for better education



**Francesca Robinson, PCRS-UK Communications Consultant**

PCRS-UK has launched a campaign to raise awareness of the importance of continuing education and training in supporting primary healthcare professionals to deliver high value, patient centred respiratory care.

Education of the workforce is a core objective of the Society and our educational strategy is taking on an exciting new focus with the launch of the Primary Care Respiratory Academy, set up with our educational partner Cogora. In parallel, our new website will make it easier to search for educational resources and information. There is also the educational support we offer via our respiratory leaders programme, national conference and network of nearly 50 affiliated local groups.

There are many reasons why the requirement for education and training should be at the forefront of clinicians', commissioning bodies' and employers' minds.

Continued pressure on NHS budgets and increasing demand means that helping busy clinicians to get the respiratory education and updates they need has never been more important. In addition many NHS staff are rapidly approaching retirement age and, as new less experienced staff are recruited to primary care, they need to be properly trained.

The job description of nurses in general practice is expanding rapidly with many now undertaking roles traditionally the reserve of GPs. However we are aware that in some situations staff are taking on routine reviews for long term conditions for which they have not been trained. We are looking to persuade employers of the need to provide training for these healthcare professionals to assure the quality and competency of the care they provide.

This concern is shared by the Queen's Nursing Institute. They recently conducted a survey of the general practice nursing workforce which revealed that more than four in ten nurses do not feel their nursing team has the right number of appropriately qualified and trained staff to meet the needs of patients.<sup>1</sup> Many nurses said they needed extensive training, study and practice in unfamiliar areas, such as chronic disease management, including COPD and spirometry. Having specialist knowledge of areas such as chronic disease management, meeting high patient expectations and keeping up with constantly evolving guidelines were seen as challenges. Nearly half of respondents said they had to take unpaid leave to undertake CPD.

Our education campaign theme, "Better education of healthcare professionals equals better care", highlights how training and education improves patient outcomes.

The second theme of the campaign, "Be trained to do the job you do", is designed to empower health professionals to seek the training they need. It is also intended to raise the awareness of those in an employers' role, such as GP partners, that they are responsible for ensuring that all their staff have the time and funding they need to keep themselves up to date.

Jane Scullion, a Respiratory Nurse Consultant and a Trustee of PCRS-UK and Education for Health, says we need to target those in primary care who need upskilling and to ensure that all healthcare professionals delivering respiratory care are getting the basics right.

"There are a whole host of healthcare professionals out there who are just getting on with the job on a

day-to-day basis and don't get many updates and don't even access online learning. I go in to practices and give talks and a surprising number of clinicians, for example, have never heard of the National Review of Asthma Deaths and its recommendations for improving care.<sup>2</sup>"

"Other nurses I come across have not received updates about the new medication that is available and have not handled the new devices, they worry about breathlessness and there are always issues about spirometry and whether they have they got the diagnosis right."

Jane says there is a need to give out a positive message about the difference that well trained health professionals can have on improving patient outcomes.

### **The importance of respiratory education**

Dr Steve Holmes, Education Lead for PCRS-UK, GP trainer, Associate Postgraduate Dean for Health Education England (South West), Clinical Respiratory Lead for Somerset CCG and a Trustee of Education for Health, says: "If, as a GP, you think you know everything there is to know about a condition and have all the skills you need, then you are lost as a clinician because you've always got to be adapting, moving forward and thinking about and changing what you do."

When considering respiratory education Steve suggests GPs and other clinicians involved in respiratory care need to ask themselves: "Do I have the knowledge to manage respiratory disease, do I know about the currently available preparations and inhalers, and do I have the skills to help my patients to use their medication appropriately?"

Steve suggests a harder area to teach is the fundamental attitudes we have to certain diseases. He explains: "As a medical educator, when I'm training young doctors and other healthcare professionals, I concentrate on this aspect quite a bit. If someone tells me that the

only effective treatment for COPD is to stop smoking and it's the patient's fault they have got the condition in the first place – that to me is a view from the 1980s. A healthcare professional who has been well trained in respiratory care would know that there are many effective interventions for COPD (influenza immunisation, inhaler therapy, pneumococcal vaccination, pulmonary rehabilitation, smoking cessation, CHD prevention, effective management of acute exacerbations). So it is important that we promote a more active clinical model to our fellow clinicians."

Steve says after reflecting on their clinical role, clinicians need to determine what is the best value education and training they can do in the limited time that is available either at work or during private study time. "Education isn't just about going to a meeting, it's a professional way of life. One of the things that ticks my boxes is seeing people grow personally in terms of their reflection, their learning and their expertise and inspiring the people we look after to do better," he says.

### **Education should inspire change and innovation**

When making the case to Clinical Commissioning Groups (CCGs) and GP federations of the need to educate the workforce, the training organisation, Education for Health focuses on the argument that education creates an inquiring mind that can result in the service development changes that will improve patient care.

Chief Executive, Monica Fletcher, says: "With limited funds and time, education for education's sake is difficult to justify. So we encourage CCGs and other NHS commissioners to consider education as a tool for leveraging service change. We want education to inspire people to implement evidence based guidelines, best practice, change and innovation because these are the elements that improve patient outcomes and also help CCGs meet the priorities of NHS England's Five Year Forward View.<sup>3</sup>"

"If people don't have the tools or skills to implement best practice then it will be far more difficult to effect change. Unfortunately that is one of the reasons why one-day educational updates are not a substitute for longer courses that concentrate on how to apply the learning to practice. Education for Health accredited educational programmes and modules do just that, as they spend significant time focusing on implementing the knowledge and best practice back in the workplace."

PCRS-UK recognises that there is a different role between longer, accredited courses and one day updates of the kind that will be provided by our new Primary Care Respiratory Academy. Our education campaign highlights the need for healthcare professionals to have better access to both updates and accredited longer courses.

Monica says nurses should not be afraid to make a case directly to the CCG for funds to go on the courses they need. Nurses can use the PCRS-UK skills checklist as a starting point for determining their training needs see <https://www.pcrs-uk.org/resource/Professional-development/nurse-skills-document>.

### **Education improves nursing care**

Gail Plester, nurse practitioner at the Revel Surgery, Brinklow and author of the A-Z Handbook for Nurses in General Practice, recently completed the Education for Health ARTP (Association for Respiratory Technology and Respiriology) spirometry interpretation course because she felt this was an area in which she lacked confidence.

Gail has diplomas in asthma, paediatric asthma, COPD, diabetes and coronary heart disease under her belt and is an independent prescriber. She spends about 50 per cent of her time looking after respiratory patients in her practice.

"As I worked through the course I found that although I had a wealth of experience and understanding of respiratory disease there was just so much more that opened up for me

knowledge-wise. The course gave me total confidence in interpretation of spirometry and this has made such a difference in my practice."

"It means I am now able to provide the care my patients need and no longer have to go to the senior partner for help with interpreting my spirometry. I feel more confident emailing respiratory consultants to ask their opinion about the more complex patients and the feedback has been very positive," she says.

Gail's new skills and confidence are enabling her to improve outcomes for patients. She explains: "Since doing the course I have persuaded my practice to install the latest spirometry machine and I'm the one that runs it. The information gleaned from it is much more advanced than the machine we had before. I feel more self-assured in diagnosing patients and only a few of the more complex cases now have to go to the hospital for further tests."

### **CCG-wide education makes a difference**

The Berkshire West Federation of CCGs has invested in COPD education and training to upskill all the practice nurses in their 55 practices with the aim of standardising and improving the care of patients.

A joint needs assessment identified COPD as a priority for improvement. However a practice nurse survey found that despite many years of nursing experience, many had not had any recent respiratory updates or training.

So the CCG paid for Education for Health to run local COPD diploma and spirometry courses, updates for nurses who had already done the diploma and updates in care planning and self-management for healthcare assistants. In addition nurses from the community respiratory team have been going in to practices to share expertise by reviewing patients on a one-to-one basis with practice nurses.

The medicines optimisation team have provided respiratory updates for GPs covering inhaler technique and the latest medication.

Allwin Mercer, Clinical Lead Nurse and Long Term Conditions Lead for North and West Reading CCG says: "We have been working to meet the educational needs of nurses at every level. Regular updates have covered the latest guidelines, medication and inhalers in order to remove variances and standardise care across all of our practices.

"We've sought to improve the quality of care for patients by identifying those who have undiagnosed COPD, those who may not be on

the most appropriate medication, or who are missing out on pulmonary rehabilitation or at risk of a hospital admission. The nurses have really welcomed the extra training. They say they are now enjoying their work more and feel better supported.

"The CCG has been very forward thinking in supporting the nurse training because they recognise that nurses are a very important part of the workforce," says Allwin. The CCG is now running training and updates for asthma care.

Although she is an experienced practitioner Allwin is currently undergoing ARTP spirometry training herself because she feels the need for a refresher. "You can be quite skilled but still find there is always something new that you can learn from a course, an update or a conference. You should never stop learning – that's why it's called continuing professional development," she says.

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## The new PCRS-UK Lay Reference Group

**Jane Scullion, presents her thoughts on the new Lay Reference Group which has been set up to provide a system of checks and balances to ensure PCRS-UK acts in patients' best interests and provides a public benefit**



**Jane Scullion**, Respiratory Nurse Consultant, PCRS-UK Trustee and Chair of the Lay Reference Group

The opening paragraph of the House of Commons Health Committee 2006/7 report on patient and public involvement in the NHS documents a long history of engagement between health care professionals and patients.<sup>1</sup>

It introduces us to what is probably the longest-lasting patient involvement initiative anywhere in the world concerning the Battle of Britain World War II fighter pilots, badly disfigured by burns injuries. They came together as a group when they were given pioneering plastic surgery under Sir Archie McIndoe and supported in the challenge of integrating back into society.

Here at PCRS-UK we have long debated the role of patient and public involvement, believing that our work should be informed by the patient perspective. We finally took the plunge in September with an inaugural meeting of the Lay Reference Group at our annual conference. We had advertised for interested members of the public to put themselves forward.

Our first meeting was exploratory, testing the ground as to how we could go forward. It became a rich mixture of experience, food for thought, "light bulb" moments and narrative. We were impressed by both the response to our advertisement, and of the commitment and enthusiasm of the group.

A key point raised was that, whilst for some people lung disease was the result of childhood infection or genetic factors, for others the relationship with smoking was a cause of stigma. The group also felt that a medical model of smoking cessation wasn't

### The Lay Reference Group

The group comprises seven patients with conditions from across the respiratory disease spectrum. PCRS-UK will receive feedback from the group at an annual meeting held during the PCRS-UK annual conference where they will be given an opportunity to comment on our current and future plans. The group will also give us email feedback on areas that are going well or need improvement.

Members will be invited on a rotating basis to attend each PCRS-UK Executive meeting and will contribute to the planning of PCRS-UK annual conference. A twice yearly report from the group will be provided to the PCRS-UK Executive and Trustees.

We will profile two members and feature highlights from the group's discussions in each issue of *Primary Care Respiratory Update*

working and that it was the social and lifestyle factors that needed addressing not just the physical dependency.

For many there had been a "wake up" moment when they realised they had to be proactive about their lung condition. However, for some people it wasn't until they experienced pulmonary rehabilitation that anyone had ever 'joined up the dots' for them, a sad reflection of our inability to direct patients to the services and help they need at an early stage of their disease. Observation and

**Lay Reference Group Member Profile**

**Name:** Bill Stubley  
 Bill, age 66, is retired and lives in North Walsham, Norfolk

**What condition do you suffer from?**  
 COPD

**When were you diagnosed?**  
 Seven years ago. I was pulling down a chimney in my house, I bent over and suddenly I couldn't breathe. I went to the GP and was diagnosed straight away. It was a shock - I had never heard of COPD until then. I've always been a really fit sportsman, playing and coaching rugby, and although I had been a heavy smoker from the age of 15, I had given up ten years previously.

**What has made most difference to you in terms of your care?**  
 Pulmonary rehabilitation. I was already reasonably fit and active but the education I received about COPD from the healthcare professionals during pulmonary rehabilitation was brilliant. They taught me to manage my condition myself and they took the fear out of becoming breathless. After the pulmonary rehabilitation I was able to join to join my local Lung Club fitness centre which I visit for only £3 a week. I now give talks and help to educate other people with COPD about how to look after themselves.

**Why did you join the Lay Reference Group?**  
 I wanted to use my own experiences to help the healthcare professionals understand how it feels to have COPD.

**What messages would you like health professionals to hear?**  
 Listen to the fears of people who have got respiratory problems, give the patients time to voice their fears, and educate patients that there are facilities out there like Breathe Easy Clubs that can help them to help themselves.

**Lay Reference Group Member Profile**

**Name:** Amanda Roberts  
 Amanda, age 60, is general manager and company secretary of Dax Products Ltd, a chemical business. She lives in Nottingham.

**What condition do you suffer from?**  
 Asthma

**When were you diagnosed?**  
 At the age of 18 months. I was sporadically hospitalised because of my condition during my childhood but in the last 23 years I have learned how to stay well and manage my condition myself. I take strong inhaled steroids and an anti-leukotriene. I don't let asthma interfere with my life.

**What has made most difference to you in terms of your care?**  
 A few years ago they thought my asthma had progressed to COPD and I was quite miserable because everything I read about COPD majored on stopping smoking and I had never smoked. But then a GP in my practice diagnosed me as being allergic and put me on an anti-leukotriene. That turned a corner.

Modern medicines have made a fantastic difference to my life. Fifty years ago when I was a child they simply didn't have the tools that they have now to treat asthma and the treatment was all a bit hit and miss.

**Why did you join the Lay Reference Group?**  
 Any health professional who puts themselves out for any condition needs to be supported and I hope that as a patient I might be able to add some value. I have found everyone at PCRS-UK to be very friendly and supportive of the patient input.

**What messages would you like health professionals to hear?**  
 Every GP surgery should have at least one healthcare professional who is a member of PCRS-UK so they can access all the education that is available.

Healthcare professionals should be prepared to listen to patients who can add insights to the work they are doing. We don't have horns!

listening were deemed to be the most useful attributes of healthcare professionals.

One clear emergent concern was travel. London is seen by many of us as an easily accessible location for meetings. Put yourself in a patient's shoes arriving at a station with escalators or stairs and a long walk to find a taxi, bus or the underground. Add to that the hustle and bustle, changing temperatures and pollution. Then something we all take

for granted becomes problematic. I personally learnt a lot from the group on particulate matter.

Our aim as we go forward is that the patient perspective will become more deeply embedded in the corporate consciousness of PCRS-UK. We will be noting any themes that emerge from the group's anecdotes and discussions. It was clear from the first meeting that these patients are prepared to help

doctors and nurses to do a better job and to help by sharing their perspective and experiences with us.

**Reference**  
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## 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

### Primary care workforce – a policy perspective

The demographics of the general practice workforce are changing and are attracting attention in NHS policy circles and the organisations advising them. At a time when the NHS wants a greater focus on long term conditions, care closer to home and avoiding hospital care, the workforce trends are going in the wrong direction.

- Inadequate numbers of medical students are selecting primary care - so incentives are being introduced in order to encourage more entry into general practice
- Only 0.6% increase in numbers of nurses working in the community over last 10 years
- There has been a 12% drop in district nurses in the 12 months to September 2015
- 54% of GPs over 50 plan to leave direct patient care in the next 5 years (2013)
- 33% practice nurses plan to retire within 5 years. (QNI survey, 2016)

The Five Year Forward View (SYFV) considered this situation and promised that gaps in workforce numbers and skills would be met by exploring innovative care models. The education and training needs of current staff are being identified and there will be more investment in training, alongside commissioning and expanding new healthcare roles. The New Deal for general practice – announced in 2015 – emphasises three different areas of focus – recruitment, retention and facilitating returners. Allied healthcare professionals are also recognised as being underused at a time when the pressures on primary care are unprecedented.

Health Education England has emphasised in its 'Framework 15' that workforce is a key enabler and driver of change in healthcare. Training and education plans need to be based on anticipated future needs and values of patients (demand), not possible future configurations of health services or numbers of existing registered

professionals (supply). Current approaches to skills deficits often focus on current needs in the system, and on training up new staff (which is a long and costly process) rather than considering the future needs of patients, and how existing staff could be trained to meet them.

The role of untrained carers and sources of support for patients are increasingly being recognised as an important neglected area. What skills and qualities do healthcare staff need to support those providing care as non-professionals, and how could the time of healthcare staff be spent to achieve the best outcomes for patients through working with carers?

Career paths need to be flexible to enable more switching between paths, and also need to be broader and less specialised. How does the NHS plan, commission, educate and train and regulate a more flexible workforce that has more generic skills so that more staff are able to respond to the needs of patients? And how do we ensure a more appropriate balance between generalists and specialists without losing sight of the importance of specialism in medicine?

These are the kinds of issues and questions that are taxing the minds of policy makers and workforce commissioners, in order that the future NHS has the right staff with the right skills in place to meet future healthcare needs.

### What is the latest on spirometry?

Spirometry is a well established tool for diagnosing obstructive airways disease, and is recommended in both national and international guidelines for diagnosing COPD and asthma. The Quality and Outcomes Framework (QOF) includes an indicator for COPD reinforcing that diagnosis should be confirmed by post-bronchodilator spirometry. However, agreement on standards and competencies for performing spirometry has lagged behind. There has been concern that the standard of performing and interpreting spirometry in general practice is very variable and that clinicians have not always been trained to use spirometry effectively. PCRS-UK (as former GPIAG) was highly influential in collaborating with other organisations to publish proposed standards for spirometry in primary care in 2009.<sup>1</sup> The Department of Health then convened a



working group to seek to improve the quality of spirometry, and published 'A guide to performing Quality Assured Diagnostic Spirometry' in 2013.<sup>2</sup>

The group was working on developing further proposals for assessing and certifying competence in practitioners who perform and interpret diagnostic spirometry. However, this work was de-prioritised within the Department of Health when the respiratory team was disbanded in 2013, and the prospect of publication remains unclear in spite of repeated efforts from the respiratory community to press for clear guidance on how competence should be assessed, and a process for certification. PCRS-UK continues to lobby for publication and will keep members informed.

Meanwhile, spirometry has gained additional prominence as a tool for diagnosis of asthma in the draft NICE guideline for diagnosis and monitoring of asthma, which recommended that any patient aged 5 or older presenting with potential asthma should receive spirometry as the first-line investigation. Many of our members expressed concern about how this would be introduced for asthma since this marks an important change from current diagnostic practice. As a result of concerns expressed by the respiratory community about the practicalities of implementation, NICE has delayed publication of the guideline in order to field test this proposal. PCRS-UK is working actively with NICE to support the field testing.

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2. A guide to performing Quality Assured Diagnostic Spirometry 2013 <http://www.pcc-cic.org.uk/article/guide-quality-assured-diagnostic-spirometry>

**Improving the use of inhaled treatments**

PCRS-UK is an active member of the UK Inhaler Group – a group convened in 2014 to ensure that patients with respiratory disease and the NHS get the best value from inhaled treatment. Thanks to all our members who took part in a survey last autumn on the importance of colour conventions for inhalers. The results are being developed as a paper for submission to a journal. Eleven member organisations from across the respiratory community will continue to work at a range of levels to:-

- Set standards for the training and assessment of inhaler technique by health professionals. This work will be followed by the development of competencies
- Recommend high quality resources such as videos for training professionals and patients
- Work with licensing and policy making organisations to ensure clarity in colour conventions for inhalers, consistency in labelling dose strength, and on patients accessing inhalers without prescriptions
- Embed inhaler technique checking and training in the prescribing and dispensing process.

**Clinical pharmacists in general practice**

Increasing numbers of practices have been employing pharmacists directly over the last few years. As patients live longer and have more co-morbidities, the challenges of polypharmacy become more pressing. Having an in-house pharmacist who combines direct patient contact to plan and review medication regimes, with a more strategic advisory role on the use of medicines within the practice can be a real asset. It is also expected that their role will include managing patients with long term conditions, and facilitating communication across sectors to ensure coordinated care for the patient. In July 2015, NHS England chief executive Simon Stevens announced a three year initiative and a £15m fund to help more practices employ pharmacists. This will both improve communication about medicines, and provide additional capacity within the practice team. Medical and nursing organisations have welcomed the move, as have pharmacy bodies.

## GETTING THE BASICS RIGHT

### Inhaler technique



Tricia Bryant, supported by Stephen Gaduzo and Stephanie Wolfe summarises PCRS-UK resources on inhaler technique for easy reference

Inhalation is the main route for the administration of drugs for conditions such as asthma and COPD. The advantage of administering drugs by inhaler is that the drugs are delivered directly to the site of action within the airways. The onset of action is rapid and systemic adverse effects are minimised.<sup>1</sup>

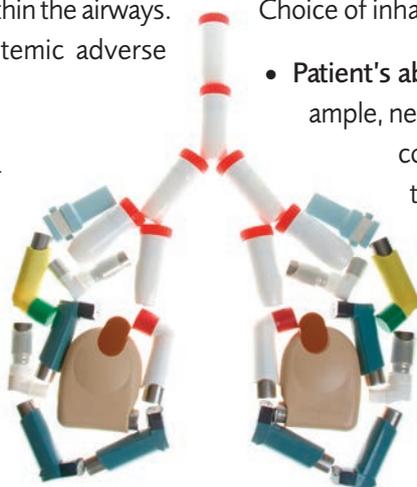
In order for inhaled therapy to be effective the correct drug, at the right dose must be prescribed and the device must be used correctly. However, poor inhaler technique is common and it is estimated that only 15% of patients use pressurized metered dose inhalers (pMDIs) correctly.<sup>2</sup> Inadequate control is linked with poor symptom control, increased emergency visits and wasted resources.<sup>3,4,5</sup>

Inhaled medications should only be prescribed by clinicians who are competent at assessing inhaler technique,<sup>3,6</sup>

but choosing a drug and corresponding device from the large variety available is potentially confusing.

Choice of inhaler should be based on:-

- **Patient's ability to use the device.** pMDIs for example, need to be used by people who have good coordination of inspiration with inhaler activation and correct inhalation flow rate - many people inhale too quickly
- **Patient's lifestyle and circumstances.** The device and drug should be compatible with the patient's needs. Some patients may be more compliant with medication which can be used as a reliever as well as a preventer/combination inhaler. Some patients may require an inhaler which has a dose counter so that they know when to organise a repeat prescriptions
- **Patient preference.** If the patient does not like the device they will not use it. The inhaler needs to be portable, easy to clean and acceptable to the patient
- **Age, competency and physical ability.** Comprehension of instructions, ability to adopt correct posture, ability to hold breath, physical dexterity and visual acuity must be considered, particularly in young and elderly patients and those with physical disabilities. Many patients may require spacer devices to support delivery of inhaled medication from a pMDI.



The least cost-effective inhaler device is the one that the patient cannot use. In deciding which device and drug formulation to prescribe healthcare professionals should first determine the patient's ability to use the prescribed device correctly

Inhaler devices may seem simple to use but they are often used incorrectly by patients and healthcare professionals alike.<sup>7-9</sup> For example, in a study of 60 patients in 2009,

Relying on the Patient Information Leaflet as the only instructional information on the use of an inhaler is not acceptable. Full training in the use of the type of device being prescribed must be provided and the technique tested either using placebo devices, prescribed medication or specially designed airflow meters.

98% considered that they used a correct inhaler technique, whereas only 8% were assessed objectively as having good technique.<sup>10</sup>

**Training the trainer – Inhaler technique**

Healthcare professionals have a responsibility to ensure that they are appropriately trained and qualified to deliver the care they are required to provide. If you are not confident that you can accurately train patients to use their inhalers correctly you must seek appropriate training. Ask your practice to support your professional development.<sup>11,12</sup>

A range of training courses are available to support your professional development including:-

- Education for Health. <https://www.education-forhealth.org/course/improving-inhaler-technique-workshop/>



- Centre for Pharmacy Postgraduate Education, University of Manchester <https://www.cppe.ac.uk/news/a?ID=329>.
- Wales Centre for Pharmacy Professional Education <http://www.wcppe.org.uk/civcrm/event/info?reset=1&id=513>

**Training patients to use devices appropriately**

Inhaler technique training is essential at the time of first prescription but is also part of ongoing respiratory care. Technique should be assessed regularly and training repeated at every review. With repeated inhaler instruction there is evidence that patient adherence improves substantially.<sup>13,14</sup>

**Common problems/mishandling of inhalers<sup>4,15</sup>**

- Not breathing out first
- Not holding the breath after taking inhaler
- Not priming the device properly
- Not shaking the inhaler (if required)
- Not holding the inhaler in the upright position (where recommended)
- Inhaling too early or inhaling too late
- Not leaving enough time between doses
- Actuation against teeth, lips or tongue
- Stopping inhalation immediately after firing
- Not using correct inspiratory effort (firm/forceful and deep for dry powder device (DPI) and gentle and deep for pMDI/mist/spacer)
- Inhalation through nose whilst and after actuation
- Failing to form a good seal around the mouthpiece



A number of tools and resources are available to support inhaler technique training. These include:-

## Devices

Pharmaceutical Companies produce placebo devices/ testers that can be used to support technique training. Contact your local pharmaceutical representative to obtain placebo devices to use with patients.

A number of instruments have been produced to support testing of inspiratory flow rate such as the In Check (Clement Clark) device, 2-Tone Trainer (Canday Medical) MagFlo (Fyne Dynamics) Aerosol Inhalation Monitor (Vitalograph). Make sure you are competent to use the training instruments as well as the inhalers.

## Videos

There are videos available to support training of patients. Suggested videos are shown below:-



Asthma UK has a web page which details how to use inhalers, common problems in using inhalers, details on where to get more information and a series of video clips on how to use different devices.

Visit the web page at <https://www.asthma.org.uk/advice/inhalers-medicines-treatments/using-inhalers/#one>



## Greater Manchester Inhaler Technique Improvement Project

supported by the Wessex HIEC Knowledge Programme. A range of different inhalers are demonstrated clearly using real healthcare professionals and patients <http://wessexahsn.org.uk/videos/show?tag=Inhaler%20Technique>



## Charts and Leaflets

- The patient information leaflet can be used to support training

- The Global Initiative for Asthma includes written instructions on how to use different devices. You can download these from [http://www.ginasthma.org/local/uploads/content/files/inhaler\\_charts\\_2011.pdf](http://www.ginasthma.org/local/uploads/content/files/inhaler_charts_2011.pdf)
- Inhaler Device Technique Cards – Seven Steps to success developed by University Hospitals of Leicester – Available for purchase see Simple Steps Education – [www.simplestepeducation.co.uk](http://www.simplestepeducation.co.uk)

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## Acknowledgements

This document was adapted from the Primary Care Respiratory Society UK opinion sheet, Tailoring Inhaler Choice written by Karen Heslop June 2012 available at <https://www.pcrs-uk.org/resource/Opinion-sheets/tailoring-inhaler-choice-opinion-sheet>

Thanks to Stephen Gaduzo and Stephanie Wolfe for their advice and help in preparing this document.

## Further Information

UK Inhaler Group - <http://www.respiratoryfutures.org.uk/programmes/uk-inhaler-group/> The UK Inhaler Group have a range of resources and tools which may be helpful in teaching inhaler technique and they are currently in the process of developing a series of standards for healthcare professionals who check and teach inhaler technique.

PCRS-UK Table of inhaled medication – See <https://www.pcrs-uk.org/resource/Guidelines-and-guidance/table-inhaled-drugs> for comprehensive list of inhaled medications.

# Service Development

## Tools to help you stratify people with asthma who should be offered a priority review



**Noel Baxter** explores how to help stratify people with asthma providing links to XML files you can access and use in your practice

The primary care population with suspected or confirmed asthma is one of the greatest diagnostic and follow up burdens that falls on general practice. In 2015 it was the 4th largest long-term condition register with a prevalence of 6.1% behind Tobacco dependency (15.9%), Hypertension (13.9%) and Obesity (7.5%). <http://www.gpcontract.co.uk>

Anyone working in general practice will know that it can be difficult to ensure an annual review with all asthma patients. In 2015, 76% of people with asthma (who had also been prescribed inhalers in the previous year) had a review. In order to get through this volume of call and recall, practices will see people face to face, review opportunistically when they attend for other reasons and also use telephone calls for those considered low risk. Though some positive findings about identifying high risk patients were noted in the ARISSA trial<sup>1</sup> we still however lack a standardised and validated risk tool in general practice. So how do we know that our limited resource and effort is being applied to those who need it most?

The National Review into Asthma Deaths 2014 (NRAD) sought to provide health professionals with some key factors that may predict for the worst outcomes. <https://www.rcplondon.ac.uk/projects/national-review-asthma-deaths>

### Overuse of short acting beta agonists (SABA)

NRAD stated:

*All asthma patients who have been prescribed more than 12 short-acting reliever inhalers in the previous 12 months should be invited for urgent review of their asthma control, with the aim of improving their asthma through education and change of treatment if required.*

In theory anyone using more than 6 puffs per week is overusing – that is equal to about 300 puffs per year, which at 200 puffs per device is only two devices per year! So it could be said that 12 devices per year is already 6x over generous.

### Detecting people who overuse SABA

GP software systems and the reliability of electronic prescribing data allows us to easily search for apparent excess use and to proactively warn the professional reviewing a patient currently overusing.

Here we will look at what has been developed both nationally and locally (highlighting EMIS Web tools) to assist general practice and we share some local adaptations that can be further modified with the help of your local IT teams according to local agreements and situation.

### The desktop alert

In 2015 Asthma UK in conjunction with EMIS Web released a number of tools to assist general practice to achieve better outcomes for people with asthma. This included a prescribing alert and a personal asthma action plan (PAAP). The prescribing alert is activated by default and readers who use EMIS Web may already have seen this. The PAAP needs to be activated within each practice to use so we would recommend that you work with your local IT people to do this though it is also easy to do by following the EMIS Web help tool.

In the high risk prescribing alert tool they have utilised the 'protocol alert' function to highlight in a pink pop up box when patients are using excess SABA or when using long acting bronchodilators without inhaled steroids.



This alert will activate if there are 3 prescriptions for SABA within a 3-month episode. This assumes that only one device is issued per prescription but in some practices SABA issues

are for two devices. This could mean that in those practices that prescribe 2 devices per issue, 24 devices could be issued before the alert is raised. Therefore it is useful to be able to design protocol alerts for your own population and prescribing habits. Also as tighter control of SABA develops it is useful if you can alter the sensitivity of the alert. We know that health professionals in general practice get 'Alert Fatigue' and can then underuse the system so set your range based on what people have agreed locally to do and think is relevant.

Southwark CCG in SE London created a modified SABA alert based on the principles of the AUK/EMIS alert. It differed by being activated if 3 or more issues of SABA occurred in a 6-month period as most local prescribers when asked said they were providing 2 inhalers per prescription for patient convenience. This query has been saved as an XML file and if you are an EMIS Web user you can obtain this file from PCRS-UK by emailing us at [info@pcrs-uk.org](mailto:info@pcrs-uk.org) stating the following in the title of your email: - Request EMIS XML file for modified SABA alert.

### The high risk SABA search

As well as checking for excess SABA use when issuing repeat prescriptions and reviewing SABA use at consultations, Southwark CCG practices also agreed to run a search proactively in order to identify these patients with 6 issues of SABA in the last year. This specific search was created as part of the 'Good asthma pyramid' improvement project that was developed by the Lambeth and Southwark Integrated Respiratory team in conjunction with the London Respiratory Network.

### Creating the high value asthma review pyramid for your practice or locality using EMIS Web reporting

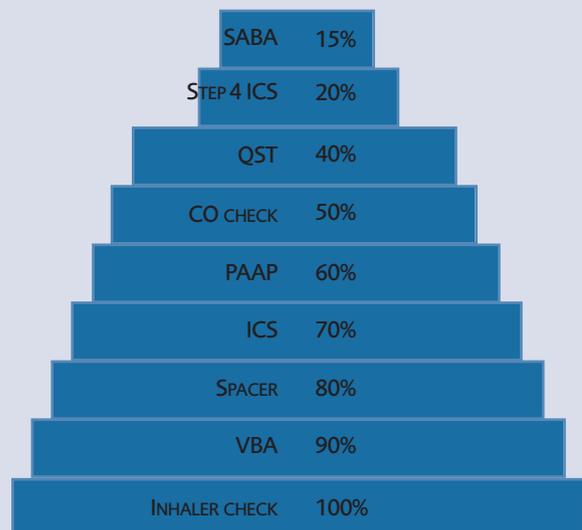
Our asthma improvement group agreed that the following were the right things to measure to indicate a good asthma review. We reached a consensus based on evidence, cost effectiveness and what best care could look like allowing for current resource pressures. This provides us with an easy to view and comprehend visual a little like the pyramid developed by the London Respiratory Network that represented QALY measured cost effectiveness in COPD.

You can see in column 2 of this page what we consider to be a target pyramid for any organisation or system looking after people with asthma.

Proportion of people with a diagnosis of asthma (using the QOF register)

Code	Numbers
SABA	Number who are prescribed >4 SABA inhalers per year
Step 4 ICS	Number who are currently on high-dose ICS (Step 4)
QST	Number who are current smokers and have been prescribed a quit smoking medicine in the last year
CO Check	Number who have had an exhaled carbon monoxide check in the last year
PAAP	Number with at least one PAAP issued (ever)
ICS	Number with more than four issues of inhaled corticosteroids (ICS) in the last year
Spacer	Number who prefer a pMDI and have also been issued a spacer device
VBA	Number who are currently smokers and have been provided with Very Brief Advice (VBA)
Inhaler check	Number who have had an inhaler technique check in the last year

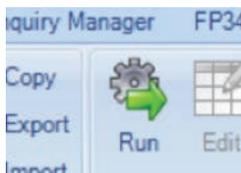
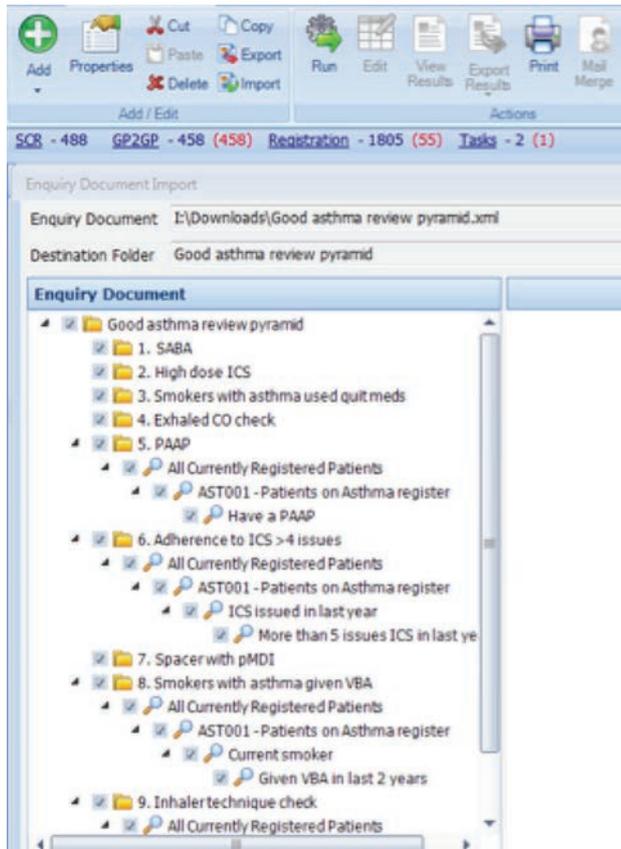
What good asthma care (at population level) might look like



**How to create your own good asthma care pyramid.** This query has been saved as an XML file and if you are an EMIS Web user you can obtain this file from PCRS-UK by emailing us at [info@pcrs-uk.org](mailto:info@pcrs-uk.org) stating the following in the title of your email:-Request EMIS XML file for Good asthma review.



Import the XML file containing your nine criteria folders with pre-set searches



Run the searches either one at a time (quicker) or run the whole folder (slower)

EMIS Web Health Care System

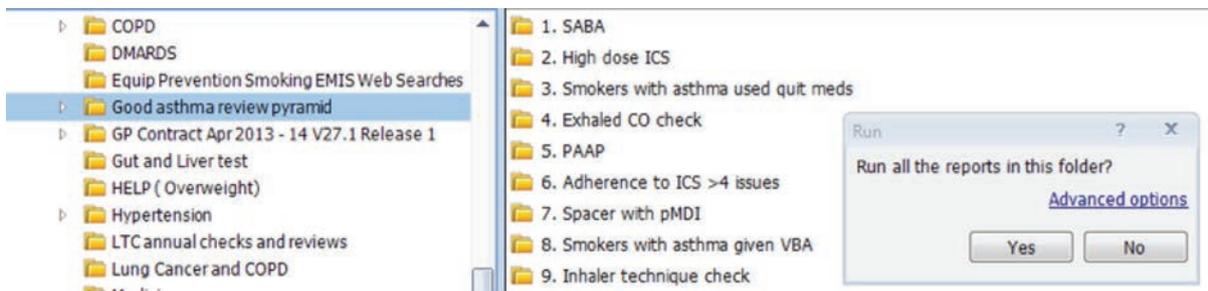
Population Reporting Enquiry Manager FP34D Batch Data Manager

Run Edit View Results Export Results Print Mail Merge Batch Add Check Patient Patient List Patient + Address Age / Sex Auto

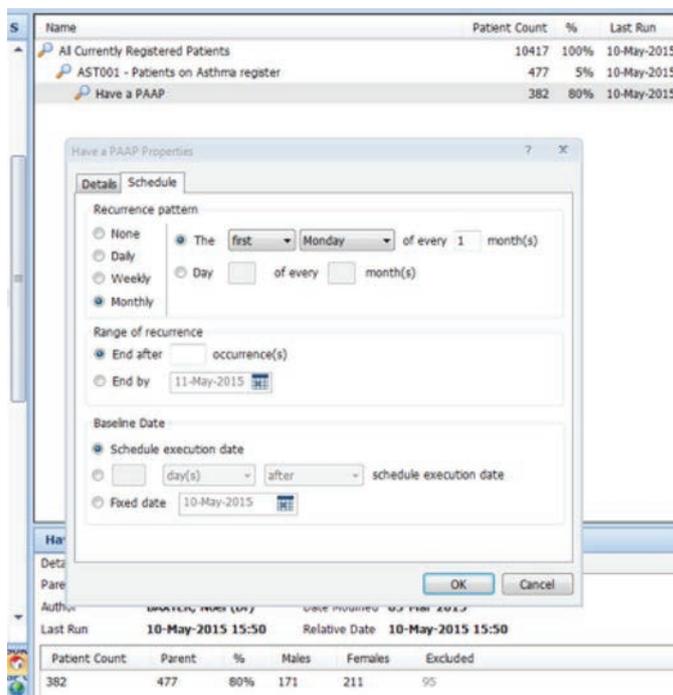
SCR - 488 GP2GP - 458 (458) Registration - 1805 (55) Tasks - 2 (1)

S	Name	Patient Count	%	Last Run	Scheduled
	All Currently Registered Patients	10417	100%	10-May-2015	
	AST001 - Patients on Asthma register	477	5%	10-May-2015	
	Have a PAAP	382	80%	10-May-2015	

# Primary Care Respiratory UPDATE



Set up to run at a regular frequency so you can see whether there is any change (right click over greyed search and select schedule tab)

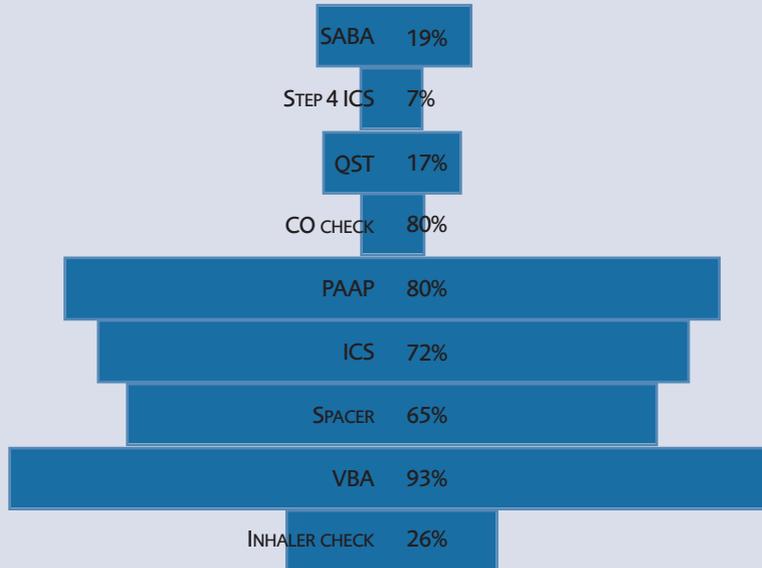


Enter your results into the good asthma review excel template, you can obtain a copy of this file from PCRS-UK by emailing us at info@pcrs-uk.org stating the following in the title of your email:-Request Good asthma review MS Excel template.

Review your good / needs improvement asthma review pyramid

Criteria	Result of search	People with asthma (QOF registered)
SABA	10%	who are prescribed >4 SABA inhalers per year
Step 4 ICS	20%	who are currently on high-dose ICS (Step 4)
QST	40%	who are current smokers and have been prescribed a quit smoking medicine in the last year
CO check	50%	who have had an exhaled carbon monoxide check in the last year
PAAP	60%	with at least one PAAP issued (ever)
ICS	70%	with more than four issues of inhaled corticosteroids (ICS) in the last year
Spacer	80%	who prefer a pMDI and have also been issued a spacer device
VBA	90%	who are currently smokers and have been provided with Very Brief Advice (VBA)
Inhaler check	100%	who have had an inhaler technique check in the last year

Real Examples – SE London practice – May 2015

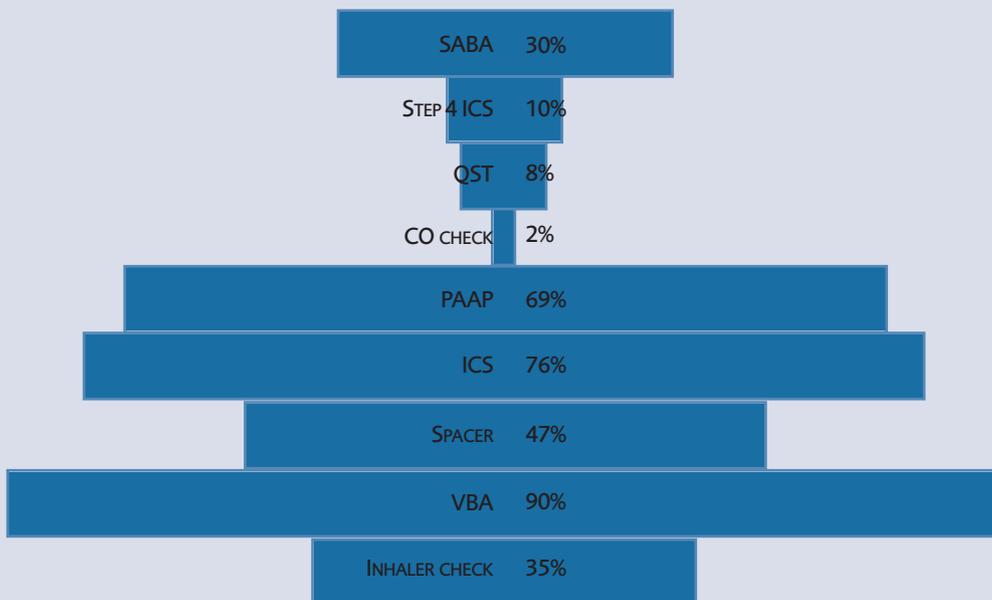


Real Examples – SE London CCG – May 2015

43 Practices

Population: 293,483

Asthma register: 12,677 (4%)



# Journal Round-Up

## npj Primary Care Respiratory Medicine Key Summaries

npj | Primary Care  
Respiratory Medicine

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/>

*npj Primary Care Respiratory Medicine* is the only fully indexed scientific journal devoted to the management of respiratory diseases in primary care. It is an international, online, open access journal and is part of the Nature Partner Journal series.

If you would like to be informed when a new paper is published by *npj Primary Care Respiratory Medicine* simply join the npj Primary Care Respiratory Medicine e-alert list to receive notification direct to your inbox. Visit [www.nature.com/npjpcrm/](http://www.nature.com/npjpcrm/) and click the link on the right titled E-alert.

### \*\* EDITOR'S CHOICE \*\*

#### **Safety and efficacy of tiotropium RespiMat versus HandiHaler in patients naive to treatment with inhaled anticholinergics: a post hoc analysis of the TIOSPIR trial**

Robert Wise, Peter MA Calverley, Ronald Dahl, Daniel Dusser, Norbert Metzdorf, Achim Müller, Andy Fowler & Antonio Anzueto  
npj Primary Care Respiratory Medicine 25, Article number: 15067 (2015) doi:10.1038/npjpcrm.2015.67  
Published online: 05 November 2015

Inhaled forms of the drug tiotropium are safe and effective for patients with chronic lung disease. Breathing difficulties caused by chronic obstructive pulmonary disease (COPD) can be treated using the 'anticholinergic' drug tiotropium, which works by enlarging the patient's airways. Tiotropium is available as a dry powder or aqueous solution inhaler. The inhaler was recently confirmed as safe in randomized trials, however, there were concerns that the trials did not verify safety and efficacy for patients

new to anticholinergic therapy. Robert Wise at Johns Hopkins University School of Medicine in Baltimore, USA, and co-workers tested two inhaled forms of tiotropium on 6,966 COPD patients new to anticholinergics. Their results indicated both inhalers were effective and presented low risks of death, heart problems or other side effects, regardless of previous exposure to anticholinergics.

#### **Factors associated with the time to the first wheezing episode in infants: a cross-sectional study from the International Study of Wheezing in Infants (EISL)**

Rosa M Pacheco-Gonzalez, Javier Mallol, Dirceu Solé, Paul L P Brand, Virginia Perez-Fernandez, Manuel Sanchez-Solis, Luis Garcia-Marcos & the EISL Study Group  
npj Primary Care Respiratory Medicine 26, Article number: 15077 (2016) doi:10.1038/npjpcrm.2015.77  
Published online: 21 January 2016

Catching a common cold in the first three months of life is a key factor contributing to early episodes of infant wheezing. An international team led by Luis Garcia-Marcos at the University of Murcia in Spain investigated the factors influencing the first wheezing episode in children under 12 months. The study, which formed part of the larger International Study of Wheezing in Infants, used data collected from questionnaires given to parents of 35,049 infants from Latin America and Europe. A total of 15,067 children were identified as having their first

wheezing episode at under a year old. Contracting a respiratory infection in the first three months of life was a significant factor across nationalities. Eczema influenced early onset wheezing in European infants, while breastfeeding provided a level of protection, though only in Latin American children.

#### **Features of COPD patients by comparing CAT with mMRC: a retrospective, cross-sectional study**

Wei-Chang Huang, Ming-Feng Wu, Hui-Chen Chen, Jeng-Yuan Hsu & The TOLD study group  
npj Primary Care Respiratory Medicine 25, Article number: 15063 (2015) doi:10.1038/npjpcrm.2015.63  
Published online: 05 November 2015

Doubling efforts for assessment: Combining two tests for defining patient health status may improve assessment of less severe lung disease symptoms. Chronic obstructive pulmonary disease (COPD) is a complex illness to manage because of its varying severity and

multitude of symptoms. Currently, doctors classify patients into groups according to their health status using one of two tests: the COPD assessment test (CAT) or the modified Medical Research Council dyspnea scale (mMRC). Jeng-Yuan Hsu and co-workers at Taichung Veterans General Hospital, Taiwan, assessed 757 patients with COPD using both CAT and mMRC. Although patients with severe symptoms were likely to be placed into the same risk group by both tests, the team found that discrepancies arose in categorizing patients with lesser symptoms. Therefore, patients with less severe COPD can be classified more accurately if both tests are used.

**Preventing and Lessening Exacerbations of Asthma in School-aged children Associated with a New Term (PLEAS-ANT): Recruiting Primary Care Research Sites—the PLEAS-ANT experience**

Michelle J Horspool, Steven A Julious, Cara Mooney, Robin May, Ben Sully & W Henry Smithson.  
npj Primary Care Respiratory Medicine 25, Article number: 15066 (2015)  
doi:10.1038/npjpcrm.2015.66  
Published online: 12th November 2015

Getting general practices to participate in research studies is challenging but achievable using suitable recruitment strategies. The research team led by Dr Michelle Horspool and Prof Steven Julious from the University of Sheffield in the UK discovered that general practices were almost twice as likely to enrol in their study on reducing asthma exacerbations in school-aged children if they had previously participated in other trials. The findings suggested that more time and investment was needed to recruit general practices that had not yet engaged in research. Simple studies that are not time-consuming and do not affect the doctor-patient relationship may be good ways to encourage participation and reach recruitment targets. Researchers need to evaluate resources available for recruitment and consider multiple strategies for encouraging participation as one method alone may not produce the desired outcomes.

**Exploring the variation in implementation of a COPD disease management programme and its impact on health outcomes: a post hoc analysis of the RECODE cluster randomised trial**

Melinde R S Boland, Annemarije L Kruis, Simone A Huygens, Apostolos Tsiachristas, Willem J J Assendelft, Jacobijn Gussekloo, Coert M G Blom, Niels H Chavannes & Maureen P M H Rutten-van Mölken

npj Primary Care Respiratory Medicine 25, Article number: 15071 (2015) doi:10.1038/npjpcrm.2015.71  
Published online: 17 December 2015

Barriers to implementation mean that care programs designed to improve outcomes in lung disease do not necessarily achieve their aims. Melinde Boland from Erasmus University, Rotterdam, The Netherlands, and colleagues assessed the effectiveness of a two-year COPD management program in which primary care teams were randomized to the management program or usual care. The program involved a two-day training course on implementing 19 interventions, including more multidisciplinary team meetings, individual treatment plans, and the use of an online patient support system. The teams implemented on average eight of the interventions. A higher level of implementation was not associated with better patient outcomes. Barriers to implementing care included motivations of the healthcare provider and patient, and the small size of the COPD population per team. Interventions should be tailored to patients' needs, skills and preferences.

**Help-seeking and antibiotic prescribing for acute cough in a Chinese primary care population: a prospective multicentre observational study**

Carmen Ka Man Wong, Zhaomin Liu, Chris C Butler, Samuel Yeung Shan Wong, Alice Fung, Dicken Chan, Benjamin Hon Kei Yip & Kenny Kung  
npj Primary Care Respiratory Medicine 26, Article number: 15080 (2016) doi:10.1038/npjpcrm.2015.80  
Published online: 21 January 2016

Doctors working in private practice are more likely to prescribe antibiotics for an acute cough than their public sector colleagues. Carmen Wong from the Chinese University of Hong Kong and colleagues found that while overall antibiotic prescribing rates were low there was a significant difference in prescribing rates between private and public practitioners (17.4% vs 1.6%). The study, which involved 455 patients from 19 primary care practices, found clinician and patient perceptions of antibiotics significantly influenced whether they were prescribed. Severity of symptoms also influenced prescribing decisions. Similar to findings from other studies, antibiotic use was not associated with improved recovery. The relationship between overprescribing and private practice needs to be explored further so that effective interventions and tools can be developed to help clinicians resist patient demands for antibiotics.

## 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>

<b>Abbreviations used in these reviews are:</b>		<b>Organisations</b>	<b>Respiratory treatments</b>
<b>Measures and investigations</b>		MRC Medical Research Council	CPAP Continuous positive airway pressure
CT	Computerised tomography	NHANES National Health and Nutrition Examination Survey	ICS Inhaled corticosteroids
CXR	Chest X-ray		LABA Long acting beta-agonist
ECG	Electrocardiograph		LAMA Long acting muscarinic agent
FEV1	Forced expiratory volume in 1 second	<b>Respiratory conditions</b>	PR Pulmonary rehabilitation
FVC	Forced vital capacity	AECOPD Acute exacerbation of chronic obstructive pulmonary disease	
mmHg	Millimetres of mercury	COPD Chronic obstructive pulmonary disease	<b>Statistical terms</b>
QoL	Quality of Life	OSA Obstructive sleep apnoea	n Number(s)
			RCT Randomised control trial
			RR Relative risk
			SD Standard deviation
			95% CI 95% Confidence Interval

### \*\* EDITOR'S CHOICE \*\*

#### Cannabis, tobacco smoking, and lung function: a cross-sectional observational study in a general practice population



John Macleod, Roy Robertson, Lorraine Copeland, James McKenzie, Rob Elton, Peter Reid  
Published 1 February 2015 Br J Gen Pract 2015; <http://dx.doi.org/10.3399/bjgp15X683521>

Although cannabis use appears to be associated with greater reported respiratory symptoms, no strong evidence has emerged of deleterious effects on objective measures of respiratory function.

This cross-sectional study investigated the influence of cannabis use, tobacco use, and use of both tobacco and cannabis, on reports of respiratory symptoms and measures of lung function among established cannabis and tobacco users in a general practice based sample in Scotland, where cannabis resin was the most common form of the drug consumed.

500 participants were recruited of whom 242 were male: 248 participants (92 males) reported use of tobacco only, whereas 252 participants (150 males) reported use of both cannabis and tobacco. Participants who used both drugs were younger and had lower body mass index than users of tobacco only. Exposures measured were tobacco smoking (pack-years) and cannabis smoking (joint-years). Cannabis type (resin, herbal, or both) was recorded by self-report. Respiratory symptoms were recorded using NHANES and MRC questionnaires. Lung function was measured by spirometry (FEV1/FVC ratio).

Although tobacco and cannabis use were both associated with increased reporting of respiratory symptoms, this was higher among those who smoked both drugs. Both tobacco and cannabis users had evidence of impaired lung function but, in fully adjusted analyses, each additional joint-year of cannabis use was associated with a 0.3% (95% confidence interval = 0.0 to 0.5) increase in prevalence of chronic obstructive pulmonary disease.

The main limitations were that the study was cross-sectional, so it is not possible to infer causality. Furthermore, as patients were recruited from attendees to their general practice; it is possible that unwell individuals were oversampled and that this may have introduced bias.

This study is the first study from the UK providing data on the potential impact of cannabis resin smoking on the prevalence of respiratory symptoms and COPD in a general practice population. The study findings indicate that there are some adverse respiratory effects from smoking cannabis and this should be included in future health education messages, in a similar way to those for tobacco smoking.

**COPD–bronchiectasis overlap syndrome**

John R. Hurst, J. Stuart Elborn and Anthony De Soyza, on behalf of the BRONCH-UK Consortium  
 Eur Respir J 2015; 45: 310–313  
<http://dx.doi.org/10.1183/09031936.00170014>

The overlap between chronic obstructive pulmonary disease (COPD) and bronchiectasis is not covered by guidelines for clinical practice. This position statement from the BRONCH-UK Consortium makes recommendations based on expert consensus, aiming to promote research and improve patient care.

COPD and bronchiectasis share common symptoms of cough with sputum production and susceptibility to exacerbations driven by infection presenting the clinician with a diagnostic challenge. COPD is diagnosed on the basis of poorly reversible airflow obstruction and is therefore a physiological diagnosis whereas bronchiectasis is diagnosed by imaging (usually computed tomography (CT)), and is therefore a structural diagnosis. An increasing number of patients with COPD have a CT scan, with consequent a consequent increase in the detection of airway wall changes, resulting in co-diagnosis or an overlap syndrome between the two conditions.

The prevalence of airway changes that would fulfil the definition of bronchiectasis increases with increasing spirometric severity of COPD. A UK study found that 30% of a primary care COPD population had airway wall abnormalities potentially classifiable as bronchiectatic. Reporting of airway wall changes is challenging, and may be different across studies, with risk of overdiagnosis. At present, COPD is not considered a cause of bronchiectasis, however, the high prevalence of airway wall abnormalities in COPD challenges this assumption. Longitudinal studies will be needed to explore this relationship further. Two studies suggest the overlap is associated with increased mortality.

It is important to assess whether COPD or bronchiectasis is the primary diagnosis in order to guide investigative strategy and treatment. There are three scenarios:

In patients with primary bronchiectasis, fixed airflow obstruction is a marker of disease severity, identifying patients with a poorer prognosis. The mechanisms, risk factors and potential management options for these patients are largely unknown, which demands more research.

In patients with primary COPD, the anatomical airway abnormalities of bronchiectasis are best considered a phenotype of the COPD disease spectrum. Further work is needed to define the pathogenesis and clinical consequences of this phenotype, particularly in terms of prognosis and whether the presence of anatomical bronchiectasis should alter the therapeutic approach.

For patients with both diagnoses, who therefore have a true overlap syndrome, there is the need to understand more about the condition with specific regard to epidemiology, natural history and treatment.

**SABRE: a multicentre randomised control trial of nebulised hypertonic saline in infants hospitalised with acute bronchiolitis**



Mark L Everard, Daniel Hind, Kelechi Ugonna, Jennifer Freeman, Mike Bradburn, Cindy L Cooper, Elizabeth Cross, Chin Maguire,

Hannah Cantrill, John Alexander, Paul S McNamara on behalf of The SABRE Study Team  
<http://dx.doi.org/10.1136/thoraxjnl-2014-206210>

Acute bronchiolitis is the commonest cause for hospitalisation in infancy. The disease is caused by a number of common respiratory viruses, with respiratory syncytial virus (RSV) the most commonly identified, and is associated with the characteristic winter peaks in admissions.

Supportive care, with supplemental oxygen to correct hypoxia, minimal handling to minimise the risk of exhaustion and the provision of fluids, remains the cornerstone of management. Antiviral agents, oral and inhaled steroids and a variety of bronchodilators have neither decreased lengths of inpatient stay (typically 3 days) nor impacted on the course of the acute illness, while an effective vaccine still appears someway off. A Cochrane review, however, concluded that nebulised saline may have clinical benefit.

The Hypertonic Saline in Acute Bronchiolitis RCT and Economic evaluation (SABRE) trial was a multicentre, randomised, open, pragmatic study where infants under 1 year requiring oxygen therapy for acute bronchiolitis were randomised to receive usual care (n=141) or 4 ml nebulised 3% saline 6-hourly in addition to usual care (n=149) until they were fit for discharge. Participants were recruited from the assessment units and paediatric wards of 10 participating centres in England and Wales between October 2011 and December 2013.

The primary outcome was the time until the infant was assessed as being 'fit for discharge', which was defined as the point at which the infant was feeding adequately (taking >75% of their usual intake) and had been in air with an oxygen saturation of at least 92% for 6 hours. The following were exclusion criteria: a history of wheezy bronchitis or asthma; gastro-oesophageal reflux; previous lower respiratory tract infections; risk factors for severe disease; carers lacking fluent English in the absence of translational services and patients requiring admission to high dependency or intensive care units at presentation.

There was no difference between the two arms in time to being declared fit for discharge (hazard ratio: 0–95, 95% CI: 0.75–1.20) nor to actual discharge (hazard ratio: 0.97, 95% CI: 0.76–1.23). There was no difference in adverse events. One infant in the hypertonic saline group developed bradycardia with desaturation.

This study does not support the use of nebulised hypertonic saline in the treatment of acute bronchiolitis over usual care.

**Expert opinion on the cough hypersensitivity syndrome in respiratory medicine**



Alyn H. Morice, Eva Millqvist, Maria G. Belvisi, Kristina Bieksiene, Surinder S. Biring, Kian Fan Chung, Roberto W. Dal Negro, Peter Dicpinigaitis, Ahmad Kantar, Lorcan P. McGarvey, Adalberto Pacheco, Raimundas Sakalauskas, Jaclyn A. Smith  
 Published 1 November 2014 Eur Respir J 2014; 44: 1132–1148  
<http://dx.doi.org/10.1183/09031936.00218613>

Chronic cough is a common presentation to both primary and secondary care. The management of these patients is often problematic, with relatively few therapeutic options. Many suffer long-term illness with a marked adverse effect on quality of life and major

medical and socio-economic consequences. Understanding of chronic cough has traditionally revolved around three diagnostic categories: a form of asthma, rhinitis, or reflux disease, though few patients fit into these conventional categories with ease. More recently, a unifying hypothesis, that chronic cough arises from a hypersensitivity of airway sensory nerves, has been proposed.

In 2011, a European Respiratory Society Task Force embarked on a process to determine the position and clinical relevance of the cough hypersensitivity syndrome (CHS). An iterative process supported by a literature review developed a 21-component questionnaire. A total of 44 opinion leaders from 14 countries participated in the survey.

There was a high degree of agreement among opinion leaders as to the concept that cough hypersensitivity underlies the aetiology of chronic cough in the majority of patients. The CHS was considered as an overarching diagnosis, with different phenotypes associated with distinct presentations in individual patients.

The classic stratification of cough into asthmatic, rhinitic and reflux-related phenotypes was supported. Significant disparity of opinion was seen in the response to two questions concerning the therapy of chronic cough. First, the role of acid suppression in reflux cough was questioned. Secondly, the opinion leaders were split as to whether a trial of oral steroids was indicated to establish a diagnosis of eosinophilic cough.

The cough hypersensitivity syndrome was clearly endorsed by the opinion leaders as a valid and useful concept. They considered that support of patients with chronic cough was inadequate and the Task Force recommends that further work is urgently required in this neglected area.

### A worldwide survey of chronic cough: a manifestation of enhanced somatosensory response



Alyn H. Morice, Adam D. Jakes, Shoaib Faruqi, Surinder S. Biring, Lorcan McGarvey, Brendan Canning, Jaclyn A. Smith, Sean M. Parker, Kian Fan Chung, Kefang Lai, Ian D. Pavord, Jan van den Berg, Woo-Jung Song, Eva Millqvist, Michael J. Farrell, Stuart B. Mazzone, Peter Dicipinigaitis, The Chronic Cough Registry  
Published 1 January 2014 *Eur Respir J* 2014; 44: 1149–1155  
<http://dx.doi.org/10.1183/09031936.00217813>

Cough is the most common complaint leading patients to seek medical attention. While the majority of these consultations reflect acute viral illnesses, a substantial degree of morbidity is associated with chronic cough; arbitrarily defined in the American College of Chest Physicians' (ACCP) guidelines as a cough being the sole or predominant symptom lasting for a minimum of 8 weeks, with no radiographic evidence of lung disease. Chronic cough may be present in conditions such as asthma, pulmonary fibrosis, lung cancer, or chronic obstructive pulmonary disease (COPD). However the majority of patients presenting with chronic cough do not easily fit into these diagnostic labels, and indeed there is frequently no obvious indicators as to the underlying diagnosis. Reports from individual centres suggest a preponderance of females with chronic cough. Females also have heightened cough reflex sensitivity.

In 2013 the members of the International Cough Registry performed a retrospective review of patients attending 11 specialist

cough centres in Europe, North America and Asia. Of the 10 032 patients presenting with chronic cough, two-thirds (6,591) were female and the most common age for presentation was 60–69 years. This patient profile was largely uniform across centres.

To examine neuro-anatomical divergence as an explanation for the striking preponderance in women, male and female healthy volunteers underwent an inhalation cough challenge with capsaicin. 10 males with a mean (interquartile range) age of 28.7 (19–47) years and 10 females aged 27.3 (21–33) years underwent capsaicin cough challenge. The maximum tolerable dose of inhaled capsaicin was significantly lower in females when compared to males. Functional magnetic resonance imaging of central-cough neural networks showed significantly larger regional responses in the primary somatosensory cortices of females compared to males despite the lower mean challenge dose of capsaicin used in females.

Patients presenting with chronic cough from diverse racial and geographic backgrounds have a strikingly homogeneous demographic profile, suggesting a distinct clinical entity. The preponderance of females may be explained by sex-related differences in the central processing of cough sensations.

### Characterisation and impact of reported and unreported



#### exacerbations: results from ATTAIN

Paul W. Jones, Rosa Lamarca, Ferran Chuecos, Dave Singh, Alvar Agustí, Eric D. Bateman, Gonzalo de Miquel, Cynthia Caracta, Esther Garcia Gil

Published 1 November 2014 *Eur Respir J* 2014; 44: 1156–1165  
<http://dx.doi.org/10.1183/09031936.00038814>

Acute exacerbations of COPD worsen health status, accelerate the rate of lung function decline, and are associated with increased mortality risk and considerable economic cost. In clinical studies, exacerbations are generally assessed based on healthcare resource utilisation (HCRU), with the degree of therapeutic intervention required to define severity. This approach does not capture ECOPDs experienced by the patient but not reported to the clinician and therefore not treated. To address this, the EXacerbations of Chronic pulmonary disease Tool (EXACT) was developed as a standardised patient-reported outcome instrument that evaluates the frequency, severity and duration of exacerbation events, based on changes in symptoms reported directly by the patient.

This study used data from the 24-week, randomised, placebo-controlled Acclidinium To Treat Airway obstruction IN COPD patients (ATTAIN) study to examine reported exacerbation events and those that were not reported but were captured by the EXACT questionnaire. The aims were to: 1) compare the incidence, characteristics and degree of concordance of exacerbation events identified using healthcare resource criteria or the EXACT; 2) assess the effect of maintenance bronchodilator treatment with acclidinium on both types of event; and 3) investigate the impact of reported (HCRU) and unreported (identified only by the EXACT) events on health status and trough forced expiratory volume in 1 s (FEV1) in these patients.

Patients with moderate-to-severe COPD received twice-daily acclidinium 200 mcg, acclidinium 400 mcg or placebo. All HCRU events were reported to physicians. "EXACT-identified" events were categorised as "EXACT-reported" (detected by EXACT and reported

to the physician) and "EXACT unreported" (detected but not reported). Health status was measured using the St George's Respiratory Questionnaire (SGRQ).

EXACT-identified event rates were more than twice the HSRU events in all study arms. For example, in placebo-treated patients, annualised rates of EXACT-identified events and HCRU events were 1.39 and 0.60 per patient per year, respectively. Concordance between HSRU and Exact-identified rates was low (kappa 0.16). Acclidinium reduced EXACT-identified events (rate ratio versus placebo: acclidinium 200 mcg 0.72 and acclidinium 400 mcg 0.71; both  $p < 0.05$ ); HCRU events were similarly reduced.

At week 24, quality of life (St George's Respiratory Questionnaire) scores improved (-6.6 versus baseline) in patients with no event during weeks 1–12. The improvements were still significant, though less than the minimum clinically important difference (MCID), in patients with HCRU events (-3.4;  $p=0.036$ ) or EXACT unreported events (-3.0;  $p=0.002$ ).

Unreported events were more frequent than reported events. Both had similar negative impact on health status. Acclidinium reduced the frequency of both types of event.

**Effect of CPAP on blood pressure in patients with minimally symptomatic obstructive sleep apnoea: a meta-analysis using individual patient data from four randomised controlled trials**



Daniel J Bratton, John R Stradling, Ferran Barbé, Malcolm Kohler  
 Thorax 2014;69:1128-1135  
<http://dx.doi.org/10.1136/thoraxjnl-2013-204993>

Between 2 and 4% of the adult population in Western countries suffer from symptomatic obstructive sleep apnoea (OSA) which is a causal factor in the pathogenesis of vascular dysfunction and hypertension. Treatment of OSAS patients with CPAP has been shown to reduce blood pressure (BP) by approximately 2–10 mm Hg in several randomised controlled trials (RCTs). Whether CPAP has the same beneficial effect on BP in the far larger group of patients with minimally symptomatic OSA (i.e. without overt daytime sleepiness) is a matter of debate.

This meta-analysis used a novel method for analysing treatment-effect interactions with continuous covariates, which is more powerful than conventional methods and allows more accurate inference to be drawn on which groups of patients may benefit most from treatment.

Trials were eligible if they included patients with minimally symptomatic OSA, had randomised them to receive CPAP or either sham-CPAP or no CPAP, and recorded BP at baseline and follow-up. Individual participant data were obtained. Primary outcomes were absolute change in systolic and diastolic BP.

Five eligible trials were found (1,219 patients) from which data from four studies (1,206 patients) were obtained.

Mean (SD) baseline systolic and diastolic BP across all four studies was 131.2 (15.8) mm Hg and 80.9 (10.4) mm Hg, respectively. There was a non-significant increase in systolic BP of 1.1 mm Hg (95% CI -0.2 to 2.3,  $p=0.086$ ) and non-significant reduction in diastolic BP of 0.8 mm Hg (95% CI -1.6 to 0.1,  $p=0.083$ ). In the sub-group who used CPAP >4 hours/night there was a statistically

significant reduction in diastolic BP (-1.4 mm Hg, 95% CI -2.5 to -0.4,  $p=0.008$ ). CPAP treatment reduced both subjective sleepiness ( $p<0.001$ ) and OSA severity ( $p<0.001$ ).

Although CPAP treatment reduces OSA severity and sleepiness, it seems not to have a beneficial effect on BP in patients with minimally symptomatic OSA, except in the sub-group who used CPAP for >4 h/night.

**Association between hospitalisation for pneumonia and subsequent risk of cardiovascular disease**



Vicente F. Corrales-Medina, Karina N. Alvarez, Lisa A. Weissfeld, Derek C. Angus, Julio A. Chirinos, Chung-Chou H. Chang, Anne Newman, Laura Loehr, Aaron R. Folsom, Mitchell S. Elkind, Mary F. Lyles, Richard A. Kronmal, Sachin Yende,  
 JAMA 2015;313(3):264-274.  
<http://dx.doi.org/10.1001/jama.2014.18229>

Several clinical studies have documented a 2-fold to 8-fold increase in the risk of cardiovascular disease (CVD) within the first 30 days after respiratory infections. A few studies also examined the association between infection and subsequent long term risk of CVD with conflicting results.

In this study from the USA, they conducted a matched-cohort study nested within 2 population-based, multicentre, observational cohorts that were followed up for over 21 years: the Cardiovascular Health Study (CHS,  $n = 5,888$ ) cohort and the Atherosclerosis Risk in Communities (ARIC,  $n = 15,792$ ) cohort. They matched each participant hospitalised with pneumonia to 2 controls. They determined whether the risk of CVD varied over a 10-year period after hospitalisation for pneumonia and whether the association persists after adjusting for traditional and novel cardiovascular risk factors.

Of 591 people hospitalised with pneumonia in the CHS, 206 had CVD events over the subsequent 10 years. Compared with controls, CVD risk among pneumonia cases was highest during the first year after hospitalisation and remained significantly higher than among controls throughout the 10 years. In ARIC, of 680 pneumonia cases, 112 had CVD events over 10 years after hospitalisation. After the second year, CVD risk among pneumonia cases was not significantly higher than among controls.

Hospitalisation for pneumonia was associated with increased short-term and long-term risk of CVD, suggesting that pneumonia may be a risk factor for CVD.

**Longitudinal change in quality of life following hospitalisation for acute exacerbations of COPD**



John Steer, G John Gibson, and Stephen C Bourke,  
 BMJ Open Respir Res. 2015; 2(1): e000069.  
<http://dx.doi.org/10.1136/bmjresp-2014-000069>  
 Published online 2015 Jan 15

Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are often accompanied by a decline in an individual's quality of life (QoL), though the time course of recovery following hospitalisation for AECOPD has been infrequently studied. Current guidelines for management of patients hospitalised with AECOPD recommend that clinical decisions, including escalation to assisted

ventilation, be informed by an estimate of the patients' likely post discharge QoL. Undue nihilism might lead to denial of potentially life-saving therapy, while undue optimism might prolong suffering when alternative palliation would be more appropriate.

This prospective cohort study from North Tyneside aimed to detail longitudinal changes in quality of life following hospitalisation for acute exacerbations of COPD.

183 patients (82 ventilated; 101 not ventilated) were recruited. Admission clinical data, and mortality and readmission details were collected. QoL, psychological well-being and functional status were formally assessed over the subsequent 12 months.

Most patients admitted to hospital with AECOPD did not experience an overall decline in QoL during follow-up, and in certain domains (disease-specific symptoms, mastery of their condition and anxiety levels), QoL improved by a clinically important amount. In addition, QoL of patients treated with assisted ventilation was, on average, stable or improved during follow-up. The QoL of patients readmitted within 12 months of discharge was significantly poorer than that of those who were not readmitted, but even among readmitted patients, QoL did not decline on average.

QoL recovers slowly following discharge with, on average, most QoL domains taking 3 months to recover.

Despite a poor outcome in some individuals, the majority of patients did not experience declining QoL and hence these results suggest that treatment decisions should not be influenced by an assumption that following discharge, a decline in QoL is inevitable.

### **The role of receipt and timeliness of treatment in socioeconomic inequalities in lung cancer survival: population-based, data-linkage study**

Forrest LF, Adams J, Rubin G, White M

Thorax 2015;70:138–145.

There are socioeconomic inequalities in lung cancer survival, and it has been estimated that over 1300 deaths could be avoided annually in England and Wales if the survival rate in the more deprived socioeconomic groups were similar to that of the most affluent. Delay contributes to differences in cancer survival, but it is not known what role socioeconomic inequalities in referral, diagnostic and treatment intervals may play in survival inequalities.

In this study, data from the Northern and Yorkshire Cancer Registry and Information Centre (NYCRIS) Hospital Episode Statistics and lung cancer audit data were linked in order to investigate the contribution of these inequalities to socioeconomic inequalities in lung cancer survival.

Socioeconomic inequalities in survival were found in a multivariable analysis adjusted for age, sex, histology, year, timely GP referral, performance status and comorbidity, with those in the most deprived socioeconomic group significantly less likely to be alive after 2 years (OR=0.77, 95% CI 0.66 to 0.88,  $p<0.001$ ). When receipt of treatment was included in the analysis, the association no longer

remained significant. Addition of timeliness of treatment did not alter the conclusion. Patients treated within guideline targets had lower likelihood of two-year survival.

Socioeconomic inequalities in lung cancer survival appear to be statistically explained by inequalities in receipt of treatment but not by inequalities in time from GP referral to first hospital appointment, or from diagnosis to treatment. However, patients who were treated within the time-to-treatment guideline targets had poorer survival compared to those who had later treatment.

Although current clinical guidelines focus on target times for referral and treatment, the results suggest that a clinical focus on ensuring equity of treatment for lung cancer is likely to reduce socioeconomic inequalities in survival, and improve overall survival.

### **Variation in treatment of acute childhood wheeze in emergency departments of the United Kingdom and Ireland: an international survey of clinician practice**

Lyttle MD, O'Sullivan R, Doull I, Hartshorn S, Morris I, Powell CV; PERUKI. Arch Dis Child 2015;100:121–125.

<http://dx.doi.org/10.1136/archdischild-2014-306591>

Wheezing is one of the most common reasons for childhood hospitalisation. While there is variation in severity and pathophysiology, with overlap between asthma and viral induced wheeze (VIW), wheezing is consistently identified as a leading presentation to emergency departments (EDs). National clinical guidelines for managing childhood wheeze exist, yet significant variation in practice occurs in other settings.

This study evaluated practice variations of ED clinicians in the UK and Ireland. 30 member departments of Paediatric Emergency Research in the United Kingdom and Ireland and 183 ED consultants treating children with acute wheeze, participated in a two-stage survey in March 2013.

29 (97%) EDs had wheeze guidelines and 12 (40%) had care pathways. Variation existed between clinicians in dose, timing and frequency of inhaled bronchodilators across severities.

When escalating to intravenous bronchodilators, 99 (54%) preferred salbutamol first line, 52 (28%) magnesium sulfate (MgSO<sub>4</sub>) and 27 (15%) aminophylline. 87 (48%) administered intravenous bronchodilators sequentially and 30 (16%) concurrently, with others basing approach on case severity. 146 (80%) continued inhaled therapy after commencing intravenous bronchodilators. Of 170 who used intravenous salbutamol, 146 (86%) gave rapid boluses, 21 (12%) a longer loading dose and 164 (97%) an ongoing infusion, each with a range of doses and durations. Of 173 who used intravenous MgSO<sub>4</sub>, all used a bolus only. 41 (24%) used non-invasive ventilation.

Variation exists in the assessment and treatment of acute severe childhood wheeze across the UK and Ireland. This reflects the lack of evidence in key areas of childhood wheeze and emphasises the need for further robust multicentre research studies.

Archives of  
Disease in Childhood

Thorax

# PCRS-UK News Round-Up



Primary Care Respiratory Society UK  
National Primary Care Respiratory Conference

**Fit for the Future: a holistic approach to respiratory care**

14th-15th October, 2016 Telford International Centre

*The premier respiratory conference for primary care - offering essential clinical updates and helping you work with your patients to optimise their spiritual, mental and physical respiratory health*

**REGISTRATION NOW OPEN**  
**Don't miss out on huge savings for the member early bird rate**

The conference will be held at Telford International Centre which has recently undergone a major development programme along with a new hotel and retail area close by. The centre is very close to the major motorway networks and has plenty of available parking. A shuttle bus will be available for those travelling by train.

**Registration starts at £149 for special early bird rate eligible members of PCRS-UK (before 30 April 2016)**

**Visit our website at <https://www.pcrs-uk.org/pcrs-uk-annual-conference> for more information details on how to register and to download your copy of the programme**

## QUEEN HONOURS PCRS-UK NURSE LEAD CAROL STONHAM

PCRS-UK nurse lead Carol Stonham has been awarded an MBE in the New Year Honours list for services to nursing.

Already a Queen's Nurse, a title which recognises nurses who are committed to high standards of practice and patient centred care, and recently awarded a Queen's Nurse long service award, Carol is senior nurse practitioner at the Minchinhampton Surgery in Gloucestershire.

In addition to treating patients, Carol, who has an MSc in respiratory care, is one of the research leads in her practice and trains and mentors students, healthcare assistants, nurses and pharmacists, often in her own time. She leads the PCRS-UK work on local groups, enabling many members to benefit from her leadership skills. She also teaches student nurses at the University of the West of England and is involved with a regional appraisal project linked to nurse revalidation. She is also Interim Board Director for her local GP Federation.

Her interest in respiratory medicine developed from working closely for 20 years in her practice with Mike Thomas, now Professor of Primary Care Research at the University of Southampton. She says she was inspired by his drive and passion for high quality respiratory care.

Carol says the joy of specialising in respiratory care, founded on good education and knowledge, is being able to make a difference to patients' lives. Her other driving force is to ensure that the job is not just done, but done well.

Speaking about her MBE, Carol said: "I am honoured to receive this award but it is not just good news for me, it is also good for primary care and the Queen's Nursing Institute because we don't get much recognition. It is also a boost for practice nurses because normally you only see high-profile people receiving these awards and it is particularly welcome for the respiratory community and for PCRS-UK because it raises our profile."

Dr Stephen Gaduzo, PCRS-UK Chair said: "I was delighted to hear of Carol's MBE in the New Year Honours list. She is an experienced and respected nurse and is a practi-

cal, pragmatic practitioner who believes passionately in quality, patient centred care. Her valuable and continuing contribution to PCRS-UK over the years includes serving on various committees, on the PCRS-UK Executive, and in particular, along with other local group leads, providing vital leadership and inspiration for our local affiliated groups. I know I reflect the views of many when I say am proud to know her and congratulate her on the recognition her well-deserved award gives her. Well done Carol!"

## CHAIR ELECT PCRS-UK EXECUTIVE

We are delighted to announce that Dr Noel Baxter has been formally appointed as Chair Elect PCRS-UK Executive and will succeed Stephen Gaduzo as Chair from 1 September 2016. Noel has played an increasing role in the leadership of PCRS-UK in recent years and his appointment, was agreed unanimously by PCRS-UK Executive and approved unanimously by the PCRS-UK Trustees.

Commenting on his appointment Noel says 'I look forward to taking over the Chair later this year and will work hard to emulate the great leadership shown and progress made by my predecessors – many of whom have been mentors for me since joining what was GPIAG in 2008. I will be delighted to represent this inclusive, professional and friendly society and be part of the collective clinical leadership that helps this organisation not only survive but grow during challenging times'.

## PCRS-UK RESPIRATORY CLINICAL LEADERSHIP PROGRAMME 2016

17/18 June 2016, St John's Hotel, Solihull

### Understanding yourself to make the best impact in your team and on patient care

- Are you keen to improve the impact you have in your team or practice?
- Are you keen to improve your ability to influence and to bring about improve-

# PCRS-UK News Round-Up

ments in care for people with respiratory conditions?

- Do you find running a meeting, presenting or giving feedback daunting?
- How do you see yourself as a leader?

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A survey of members on their views of this publication at the end of last year received 71 responses. The survey results reveal that of those who responded more than 40% state they read the Update from cover-to-cover with a further 55% reading selected articles. 51% keep the Update for future reference and a further 39% pass it on to colleagues. There is a strong consensus that the style, layout and design are good and appropriate. The most popular articles are the Getting the Basics Right (68%) and the centre-fold pull out charts (55%). Free text comments include "An amazing journal, I really value having a paper copy rather than online", and "When the articles and editori-

als are linked to recent policy or significant documents e.g. NRAD – this is really helpful and helps me to digest the policy, read between the lines and see it in context." Other anecdotal feedback is also very positive.

We received a number of suggestions for content for future issues including:-

- Idiopathic pulmonary fibrosis
- Palliative care in COPD
- Pulmonary rehabilitation
- Referral pathways for occupational lung disease
- Bronchiectasis
- Management of respiratory symptoms in the under 5's

If you want to see a specific topic covered in *Primary Care Respiratory Update* please contact us via Tricia Bryant at [tricia@pcrs-uk.org](mailto:tricia@pcrs-uk.org)

## SECOND OPINION

### Your respiratory questions answered...

**Question:** Can I use a hand-held micro-spirometer to screen for COPD in my practice?

**Answer:** When used by an experienced, trained operator, the small, hand held meters which provide digital readings (but no visual display) are a cheap option which may be useful as a screening tool to identify people with abnormal readings who should then be assessed by full diagnostic spirometry. They can also be used to monitor lung function in a previously diagnosed COPD patient.

The same rules apply for hand-held spirometers in terms of reproducibility, cleaning and calibration/verification as with full diagnostic spirometry equipment.

*Acknowledgements:* Thanks to Dr Hilary Pinnock, Sally Harris and Carol Stonham for their help in replying to this question

#### Have you got a question for Second Opinion?

If you have a question for Second Opinion please submit your question to [info@pcrs-uk.org](mailto:info@pcrs-uk.org) quoting "Second Opinion" in the subject line



## Delivering Excellence Locally

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### Educating the local multidisciplinary team: the Hull and East Riding Airway Focus Group



**Francesca Robinson** talks to **Joanne Thompson**

The Hull and East Riding Airway Focus Group (HERAFG) has grown so successfully since it launched in 2013 that it has put on its first one day conference for 85 enthusiastic delegates.

The PCRS-UK affiliated group was born after a "lightbulb moment" for Joanne Thompson, Respiratory Nurse Specialist at Hull and East Yorkshire NHS Trust.

"I'd heard about other people trying to run educational respiratory groups and I thought, we've got nothing locally why can't we give it a go? I broached the idea with a respiratory consultant and he said tentatively, let's run with it, and it went from there," explains Joanne.

The group started with a series of evening events, which generally attract between 40 and 50 people, and caters for the multidisciplinary team involved with respiratory care across primary and secondary care in the Hull and East Riding region of Yorkshire.

After running five evening meetings Joanne decided to be more ambitious and organise a one day conference. She says new developments are occurring all the time in respiratory medicine and events like this are vital for cascading vital updates down to local healthcare professionals.

The conference, held in November, covered a variety of topics including an update on some new local COPD guidelines, home ventilation, learning from the National Review of Asthma Deaths, lung cancer and palliative respiratory care. Breakout sessions covered an update on new inhalers introduced in the local guidelines, a spirometry session and telehealth.

Speakers gave presentations for free and local pharmaceutical companies funded the event by paying for exhibition stands.

Joanne says organising this event was a steep learning curve. She admits that at one point she felt she had taken on too much as she had to learn about practicalities such as how to plan the event, what venue to use, how to advertise and market the event, how to produce leaflets and how much to charge exhibitors for stand space. "Speakers had to be organised so that they knew where they needed to be and at what time, presentations had to put on to a slide set, the room had to be set out correctly – these were all things I had never been involved with before. Although it is time consuming, you learn as you go along and when you've done it once it gets much easier."

At first Joanne struggled with the administration; preparing paperwork for meetings, doing and distributing the minutes, and collating evaluation forms, herself. Now the local pharmaceutical companies have eased her load by providing several hours of secretarial support a month.

Despite all this hard work she says the many positive comments and suggestions for future events she got back after the conference have made it all worthwhile.

Joanne now runs HERAFG jointly with a registrar colleague and is supported by a steering group of up to 15 healthcare professionals which meets four times a year to plan events.

She says she found it really hard to delegate in the early days but now she will approach people who are willing to help and says the response from her colleagues has been fantastic. "Over time I have gained the respect of colleagues and pharmaceutical representatives, who have been very pleased with the large turnout at events. It is this support that is enabling us to go from strength to strength. The group is a success because it is held together by the commitment of the steering group. We are all driven by a passion to change and improve respiratory services for local people."

Joanne is now looking to develop a website, a blog and a newsletter to keep the group in touch with new developments and future meetings.

"The Hull and East Riding Airways Focus Group is about sharing good practice. I am passionate about respiratory care and education and get a real thrill from seeing lots of people come to the meetings and sharing the learning and the updates then taking it back to their practices and their workplaces. At the end of the day the group is all about improving the care of the patient," says Joanne.

Tips for running a successful local respiratory group:

- Start by running small events – don't try to run before you can walk
- Set aside plenty of time – planning events can be time consuming
- Share the load – be prepared to delegate
- Gain the support of your colleagues
- Share PCRS-UK resources at your meetings
- Let PCRS-UK help you to publicise your event via email and social media
- Join the PCRS-UK Affiliated Leaders Group where you will gain valuable support and be able to share tips with others.

### HOW PCRS-UK CAN HELP YOU TO SET UP A NEW GROUP...

- We can help you get started and introduce you to members who are already running successful groups so that they can help mentor you through the initial stages
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**CASE-BASED LEARNING** **OPEN****When should I be considering home oxygen for my patients?**Jay Suntharalingam<sup>1</sup>, Sabine Hippolyte<sup>2</sup>, Vikki Knowles<sup>3</sup>, Daryl Freeman<sup>4</sup>, Irem Patel<sup>5</sup> and Maxine Hardinge<sup>6</sup>

The ability to provide oxygen in a patient's home can offer enormous benefits, including improvements in life expectancy when given in the appropriate setting. Confusingly, however, home oxygen is available in many forms, including long-term oxygen therapy (LTOT), ambulatory oxygen therapy (AOT), palliative oxygen therapy (POT) and short-burst oxygen therapy (SBOT)—each with varying degrees of supporting evidence. The British Thoracic Society (BTS) has recently published new guidance on home oxygen therapy, after collating the available evidence. This article aims to summarise those guidelines, focusing on who should and should not be considered for oxygen therapy. Although the BTS guidelines target a UK audience, many of the principles covered below are applicable internationally, even if the availability of certain oxygen modalities and supporting service arrangements may vary between different healthcare systems.

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**CLINICAL SCENARIO 1: A 63-YEAR-OLD MAN WITH MODERATE COPD—IS HOME OXYGEN INDICATED?**

A 63-year-old retired shopkeeper attends for his annual chronic obstructive pulmonary disease (COPD) review. He was diagnosed 3 years ago following a 40 pack-year history of smoking, and since then he has been managed with tiotropium. His exercise tolerance was initially reasonable, but it has recently fallen to 410 m. As a result, he has lost confidence and become less independent. One of his friends suggested that he ask for home oxygen to help with his symptoms. His spirometry shows moderate airflow obstruction (FEV<sub>1</sub> 1.5 l or 51% predicted, FVC 2.7 l or 91% predicted and FEV<sub>1</sub>/FVC ratio 56%). His oxygen saturation is 96% on air.

**SHOULD OXYGEN BE USED IN BREATHLESS PATIENTS, IN THE ABSENCE OF HYPOXAEMIA?**

This is a typical COPD presentation, with first symptoms occurring in late adulthood following a significant smoking history and accompanied by supporting changes on spirometry. In this context, patients often experience frightening and debilitating breathlessness. Of note, his saturations remain well preserved on air (i.e., >92%), demonstrating that he is not hypoxaemic at rest. What is the role, if any, of oxygen in this setting?

The British Thoracic Society (BTS) oxygen guideline summarises the evidence for, and provides recommendation on, the different options for home oxygen therapy (listed in Table 1).<sup>1</sup> Box 1 summarises the key recommendations from the guideline. Previously, both short-burst oxygen therapy (SBOT) and ambulatory oxygen therapy (AOT) have been considered for nonhypoxaemic patients with disabling breathlessness. The evidence to support this, however, is limited.

**SHORT-BURST OXYGEN THERAPY**

SBOT refers to the intermittent use of oxygen for short periods (typically 10–20 min) immediately before or after exercise, with

the intention of relieving breathlessness and speeding up recovery. Although SBOT has been offered for many years, several recent studies show a lack of efficacy in terms of improving exercise tolerance, recovery time or breathlessness.<sup>2–5</sup> Many of these studies were randomised and double-blinded, using air and/or fan therapy as comparators. Studies included both hypoxaemic and non-hypoxaemic patients but failed to show benefit in either group. Given these data, the guidelines conclude that there is no therapeutic role for SBOT in either hypoxaemic or non-hypoxaemic COPD patients.

**AMBULATORY OXYGEN THERAPY**

AOT is the use of oxygen delivered via a portable cylinder during exercise and other exertion, such as activities of daily living. Historically, AOT has been used in mobile patients who are not hypoxaemic at rest but who desaturate on exercise, with the aim of improving oxygen saturations and exercise capacity.

A number of lab-based studies suggest that AOT may improve certain physiological parameters during supervised exercise.<sup>6</sup> However, longer-term 'real-life' clinical trials of AOT used at home/community suggest that AOT offers no substantial long-term benefits and is often under-utilised.<sup>7,8</sup> Appropriate use of domiciliary oxygen relies on successful patient engagement—this is a particular issue with AOT where patients can feel self-conscious leaving the house with visible, and often heavy, oxygen equipment. Given the lack of long-term data, there is therefore insufficient evidence to support routine use of AOT in COPD patients who do not fulfil the criteria for LTOT.

Despite the lack of evidence, it is recognised that a small proportion of patients with debilitating breathlessness and reduced exercise capacity due to hypoxaemia may engage with using AOT and may benefit from it. This is particularly relevant in other non-COPD chronic lung diseases (e.g., pulmonary fibrosis) in which patients more often tend to desaturate substantially on exercise. The guidelines therefore allow motivated

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**Table 1.** Abbreviations for types of oxygen therapy

Abbreviation	Definition
AOT	Ambulatory oxygen therapy: The use of oxygen delivered via a portable cylinder during exercise and other exertion, such as activities of daily living
LTOT	Long-term oxygen therapy: Oxygen administered for $\geq 15$ h/day for patients who are chronically hypoxaemic
POT	Palliative oxygen therapy: Oxygen to relieve dyspnoea in a life-limiting disease where all reversible causes have been treated
SBOT	Short burst oxygen therapy: The intermittent use of oxygen for short periods (typically 10–20 min) immediately before or after exercise, with the intention of relieving breathlessness and speeding up recovery

**Box 1** Summary of key recommendations from the BTS guideline.<sup>1</sup>

- Oxygen is a treatment for hypoxaemia, not breathlessness
- Home oxygen prescriptions need specialist review—refer to your local home oxygen assessment team, rather than prescribing in primary care
- Long-term oxygen therapy (LTOT) can improve survival in stable COPD patients who remain chronically hypoxic
- Short-burst oxygen therapy (SBOT) is ineffective and should not be ordered
- Ambulatory oxygen therapy (AOT) is unlikely to provide long-term benefits in the majority of patients with exertional dyspnoea and should not be routinely ordered
- Palliative oxygen therapy (POT) is not as effective as opiates in controlling dyspnoea in life-limiting disease and should only be ordered when all other options have been explored.

**Box 2** Strategies for relieving breathlessness in people with COPD

*Options other than oxygen*

- Smoking cessation
- Lifestyle changes (e.g., increase in activity levels, weight loss)
- Pulmonary rehabilitation
- Optimisation of inhaler therapy—choice of inhaler and inhaler technique
- Refer to the community respiratory team
- Consider addressing any mental health issues
- Put into contact with a patient support group

patients to be considered for a trial of AOT following formal assessment by a specialist home oxygen assessment service, once all other medical interventions have been optimised.<sup>1</sup> These patients should only continue if they can demonstrate benefit from, and good compliance with, therapy.

**WHAT ARE THE ALTERNATIVES TO OXYGEN THERAPY IN THIS PATIENT?**

It is important to help the patient understand why he is breathless and that oxygen is a treatment for low oxygen levels, not breathlessness. Alternative strategies for relieving breathlessness are listed in Box 2. If the patient is still smoking, then treating his tobacco dependence is paramount. Lifestyle changes, such as increasing activity levels and losing weight, can also improve breathlessness. Referral to a local pulmonary rehabilitation program is crucial, as it can improve breathlessness and exercise tolerance, as well as offer disease education and self-management skills. Ensure that his inhaled therapy is optimised by checking his inhaler technique, addressing any adherence issues and consider adding a LABA. According to availability, refer to a community respiratory team, or other specialist respiratory service, to provide ongoing support. There may be a role for specific mental health support for those with a high anxiety component or low mood. Finally, he should be put in contact with a local patient association (e.g., in the UK, BreatheEasy groups are local peer support groups sponsored by the British Lung Foundation (BLF)), which can offer further local support.

**WHAT IS THE ROLE OF LTOT IN COPD?**

LTOT, i.e., oxygen administered for  $\geq 15$  h/day for patients who are chronically hypoxaemic, remains the most evidence-based form of

domiciliary oxygen in use. The evidence for LTOT centres around two landmark RCTs carried out in the 1980s, which both showed a survival benefit in COPD patients that only became apparent after several years of use.<sup>9,10</sup> At present, smoking cessation and LTOT are the only two interventions known to improve survival outcomes in COPD.

**CLINICAL SCENARIO 1: THE STORY CONTINUES**

The same gentleman has been under your care for a further 5 years. During this time, he has become much more limited and now has an exercise tolerance of 100 m. He has experienced several exacerbations and has been admitted twice in the last year. He attends for a routine review 3 weeks after his most recent admission. His spirometry has continued to deteriorate (FEV<sub>1</sub> 0.6 l or 23% predicted) and he is now hypoxaemic (saturations 91% on air). Unfortunately, he has also started smoking again

**WHEN AND HOW SHOULD I SCREEN PATIENTS FOR LTOT?**

Given the evidence for LTOT, it is important that potential candidates be screened and referred in a timely manner. It is therefore recommended that all patients be screened within their annual COPD assessment. Patients whose resting saturations are  $\leq 92\%$  on air during a period of stability should be referred to their local home oxygen service for a formal assessment with arterial blood gas sampling. LTOT should only be prescribed by specialists after a comprehensive review, and it is not something that should be initiated in primary care.

The need to identify patients early must be balanced against the potential for overprescribing LTOT to ‘unstable’ patients who have not yet fully recovered from an exacerbation.<sup>11</sup> Patients should therefore not be screened for LTOT until they are  $\geq 8$  weeks clear of an exacerbation—thus, our patient would need to be rescreened in 5 weeks’ time.

**LTOT ASSESSMENT AND ADMINISTRATION**

Oxygen is a medicine used to treat hypoxia. Similar to any drug, the appropriate dose for an individual patient needs to be considered, and it can vary. Patients referred to a home oxygen service will undergo a comprehensive assessment including checking blood gases that will determine whether oxygen is required, and at what level it should be administered. The home oxygen assessment service will ensure that the patient does not become hypercapnic on oxygen and will complete the appropriate documentation (e.g., in the UK a Home Oxygen Order Form or HOOFF), prescribing the required flow rate for the patient's LTOT. This is typically delivered via nasal prongs for  $\geq 15$  h/day through an oxygen concentrator installed in the patient's home. Patients who use their oxygen for less than this amount are unlikely to see any survival benefits. Those who are mobile outdoors may be offered AOT in addition to LTOT to enable them to accumulate sufficient hours of LTOT usage per day,<sup>12</sup> and will undergo further assessment to determine whether a higher flow rate is needed during exercise.

The home oxygen assessment team will also educate the patient and carers and work with the home oxygen supplier to make sure that a comprehensive risk assessment has been completed in the patient's home. Patients will be informed of their responsibility to use oxygen safely, including abstinence from smoking (at the very least while using the oxygen). The home oxygen team should also identify patients at risk of harm from excessive oxygen, for example, during an ambulance transfer, and ensure that care plans and/or alerts are in place to address this.

Commencing LTOT is a key milestone in any patient's disease trajectory. Not only will the treatment have a huge impact on their life and that of their carers but the need for LTOT also signifies advanced disease—this carries advance care planning implications that may need to be considered.

**LTOT AND SMOKING**

It is not known whether patients who continue to smoke receive any survival benefit from LTOT. As current smoking is the main driver of premature mortality and adverse outcomes in COPD, there are theoretical and physiological reasons why these patients are unlikely to have the same benefit—however, 33–48% of patients included in the original landmark LTOT trials were current smokers at the time of recruitment. Notwithstanding any possible lack of benefit, the main concern over current smoking and LTOT is the potential for great harm, not only to the individual but also to carers, co-habitants and others.<sup>13</sup> Up to 25% of all oxygen- and smoking-related domestic fires result in death and 33% in serious injury.<sup>14</sup>

The current guideline leaves the final decision regarding oxygen prescription with individual clinicians, but it does offer practical advice for home oxygen services around risk estimation and mitigation. Just as prescriptions of nephrotoxic drugs are modified in patients with renal impairment because of the potential for harm, so any decision on home oxygen prescription needs to balance the potential clinical benefit against the risk of harm on a case-by-case basis.

**CLINICAL SCENARIO 2: A WOMAN WITH ADVANCED METASTATIC BREAST CANCER WHO IS BREATHLESS—IS HOME OXYGEN APPROPRIATE?**

A 58-year-old office worker has been under an oncologist for 8 years with breast cancer. Her disease has repeatedly progressed despite several chemotherapy regimens. She now has advanced disease with pulmonary metastases and is under supportive care only. Her husband contacts you shortly after her last oncology assessment to report that she now has debilitating breathlessness. When you visit her she is breathless on minimal exertion but still

has a well-preserved saturation (94% on air). She asks whether she should have home oxygen.

**IS THERE A ROLE FOR OXYGEN IN NON-HYPOXAEMIC PATIENTS WITH ADVANCED DISEASE WHO ARE BREATHLESS?**

Assuming that the oncology team has excluded all treatable pathologies (e.g., infection, PE, pulmonary embolism, anaemia), the aim of management is to offer symptom control in a minimally intrusive way. In this setting, is there a role for palliative oxygen therapy (POT)—i.e., oxygen to relieve dyspnoea in a life-limiting disease in which all reversible causes have been treated?

A number of studies, including a large RCT, have found no symptomatic benefit in non-hypoxaemic patients from supplementary oxygen over medical air.<sup>15,16</sup> One study, however, demonstrated that opioids can control dyspnoea more effectively than oxygen.<sup>17</sup> Fan therapy has also been reported to be helpful. Current guidance therefore suggests that oxygen is not indicated in dyspnoeic patients with life-limiting illness who are non-hypoxaemic, and that a trial of opioids or fan therapy should be offered instead.<sup>1</sup>

**CLINICAL SCENARIO 2. THE STORY CONTINUES**

The same lady has remained poorly, but stable, for a further 6 weeks. A community matron routinely visits her and reports that her symptoms are unchanged but her saturations are now lower at 89% on air. Is home oxygen indicated now?

**SHOULD POT BE CONSIDERED IN HYPOXAEMIC PATIENTS?**

This lady is now hypoxaemic, presumably because of disease progression. Assuming that there is no evidence of any new treatable pathology, should oxygen be considered now?

Unlike LTOT, the aim of management here is simply to provide symptom relief, not to improve life expectancy. With this in mind, the available evidence, albeit limited, suggests that POT does not confer any symptomatic benefit over air in hypoxaemic patients.<sup>18</sup> Again, opioids appear to be more effective at improving symptoms in this setting.<sup>17</sup> Many non-pharmacological-based interventions can also help, from the simple use of room/handheld fans to positioning and reassurance.

POT should therefore not be offered routinely in either hypoxaemic or non-hypoxaemic patients with life-limiting disease. POT may, however, be considered occasionally in either patient group by a specialist palliative care team when intractable breathlessness persists and all other treatments have been tried. The response to POT should be formally assessed, and therapy should be discontinued if no symptomatic relief is obtained.

**SUMMARY**

This article has demonstrated that oxygen should be considered a treatment for hypoxaemia, not breathlessness, and thus it has little role in the non-hypoxaemic patient. Conversely, robust evidence exists for the use of LTOT in chronically hypoxaemic patients where it confers a significant long-term survival benefit. These patients need specialist assessment and follow-up by a local home oxygen assessment service. There is little evidence to support the routine use of other forms of oxygen such as SBOT, AOT or POT in patients who do not qualify for LTOT.

**CONTRIBUTIONS**

JS wrote the initial draft of the paper. MH, IP, SH, VH and DF all subsequently added significant contributions to the final document

**COMPETING INTERESTS**

The authors declare no conflict of interest.

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**PERSPECTIVE** **OPEN**

# Oxygen therapy in palliative care

H John Fardy<sup>1</sup>

Breathlessness in advanced disease is a common problem, with the majority of people experiencing breathlessness in the weeks before death. The thrust of the new British Thoracic Society guidelines for home oxygen in adults is that oxygen therapy for home use is most useful in chronic hypoxaemia. However, clinicians make individual clinical decisions, cognisant of the guidelines but ultimately determined by what relieves the symptoms of the individual most effectively.

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The recent publication of the article 'When should I be considering home oxygen for my patients' is timely.<sup>1</sup> On the basis of the new British Thoracic Society guidelines for home oxygen in adults,<sup>2</sup> it is a practical summary and the explanation of when to use oxygen therapy by means of developing case studies is helpful.

Oxygen is a therapy and, as a result, has benefits, but also risks. We are all aware of the 'carbon dioxide retainer' in chronic obstructive pulmonary disease (COPD), but there are also other situations in which oxygen therapy has risks. It is a drug that must be dosed and monitored appropriately.

The thrust of the guideline is that oxygen therapy for home use is most useful in chronic hypoxaemia. If the person is breathless, but not hypoxic, oxygen is generally not indicated. Alternative ways of dealing with breathlessness include the moving of air across the dermatomes of the trigeminal nerve ('fan therapy'). Oral morphine in low doses (the dose is much less than for pain) is the drug of choice for breathlessness.

Breathlessness in advanced disease is a common problem (see Table 1),<sup>3</sup> with 65% of people experiencing breathlessness in the weeks before death.<sup>4</sup> Particularly in the palliative care setting, many patients have multimorbidity and sometimes the breathlessness is unrelated to their palliative care problem. A patient who has a malignancy may also have heart failure, anaemia, recent-onset pleural effusion, hypothyroid disease or undiagnosed and therefore untreated COPD. All these diagnoses can present as breathlessness. In addition, having dyspnoea is anxiety-provoking and being anxious can provoke dyspnoea. The strategy of

(i) adequate history, (ii) appropriate examination, (iii) consideration of this patient's problem and finally (iv) consideration of special investigations will hopefully lead to a diagnosis.

Guidelines make absolute recommendations. If a patient with advanced disease is breathless and hypoxic, oxygen is the preferred treatment; if they are breathless and not hypoxic, oxygen is not recommended. However, clinicians will (and should) make individual clinical decisions, cognisant of the guidelines but ultimately determined by what relieves the symptoms of the individual most effectively. The art of medicine lies in deciding, with the patient, what is reasonable treatment for this patient at this time.

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The author declares no conflict of interest.

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**Table 1.** Prevalence of breathlessness in advanced disease<sup>3</sup>

	Estimated prevalence of breathlessness in advanced disease
Cancer	10–70%
AIDS	11–62%
Heart disease	60–88%
Chronic obstructive pulmonary disease	90–95%
Chronic kidney disease	11–62%

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**PERSPECTIVE**    **OPEN**

# The practicalities of living with oxygen: a perspective from a person living with COPD

Vanessa Smith<sup>1</sup>

Although I welcomed oxygen into my life, it required a degree of adjustment and perseverance. The concentrator told all visitors that this was the home of a 'patient', and using ambulatory oxygen in public takes a lot of getting used to. Safe use of oxygen entailed some changes in routine activities, and travel needs to be planned ahead to ensure that I don't run out of oxygen. Despite its drawbacks, oxygen has enabled me to have a full and active life once again.

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Although I welcomed oxygen into my life, it required a degree of adjustment and perseverance. My chronic obstructive pulmonary disease (COPD) 'became visible'. The concentrator humming away in the corner of my lounge told all visitors that this was the home of a 'patient'. It also meant I needed to turn up the volume on the television! The 25 m of tubing running through the house poses a trip hazard and gets caught up on door handles as I walk by. Cooking is fraught with danger because of oxygen-saturated hair and clothing, so I eat microwave meals and no longer use a hair dryer or any electrical equipment that could produce a spark or intense heat. Wearing a cannula can cause soreness around my ears or in my nostrils, and most creams that might remedy this are a 'no-no,' as oil-based creams are contraindicated because of safety concerns.

Showering is a joy now that I have the energy for it and have worked out how not to get tangled up in the process, and my sleep is much improved. I used to awaken every 2 h, but now I often sleep straight through.

I love my ambulatory liquid oxygen—it is my best friend. I don't drive and have no access to a car, so I walk many miles with it in a backpack. Make no mistake though, stepping outside wearing oxygen in public for the first time was one of the hardest things I ever had to do. It takes a lot of getting used to—that first time on the street, on a bus, in the supermarket or restaurant. I think patients could benefit from having 'oxygen buddies' with them on those first few occasions.

Travel needs to be planned ahead. On a day out, I need to be sure of distances and timetables to ensure that I don't run out of oxygen. Travel abroad is difficult but doable.<sup>1</sup> The airlines require medical information forms to be completed by your GP, and each airline has its own list of 'acceptable' portable concentrators. Portable oxygen concentrators cost a great deal to hire or buy and add hugely to the cost of a holiday. Travel insurance is unaffordable for me now, so I go without it.

Despite its drawbacks, oxygen has enabled me to have a full and active life once again. Six years on oxygen, and a determination to live life to the full, has taken me from being virtually housebound to adventures such as speeding down a zip-wire in Cornwall (with my oxygen on my back!). See Figure 1.



In the picture my daughter is on the left wire and I am just behind her on the right. If you look carefully you can just make out my beloved 'Helios Marathon' on my back, giving me the oxygen that has made all these activities a possibility

**Figure 1.** The author speeding down a zip-wire with her oxygen cylinder.

**COMPETING INTERESTS**

The author declares no conflict of interest.

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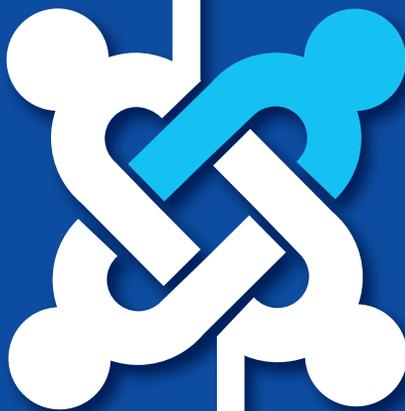
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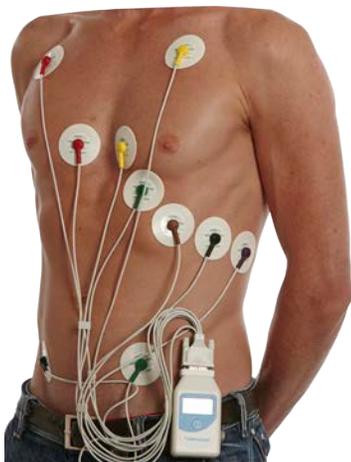
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