

Volume 1  
Issue 1  
July 2014

# Primary Care Respiratory **UPDATE**



[www.pcrs-uk.org/pcru](http://www.pcrs-uk.org/pcru)

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Editor's welcome

Why people die from asthma – have we become complacent in primary care?

Top tips for getting the basics right in asthma care

Delivering respiratory excellence locally – get involved

New resources to support you to deliver high quality care in asthma and COPD



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## Asthma

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**References:** 1. Relvar Ellipta Summary of Product Characteristics. GlaxoSmithKline; 2014. 2. Bleecker ER *et al.* Fluticasone furoate/vilanterol 100/25mcg compared with fluticasone furoate 100mcg in asthma: a randomized trial. JACI In Practice 2014. 3. Svedstater H *et al.* Ease of use of a two-strip dry powder inhaler (DPI) to deliver fluticasone furoate/vilanterol (FF/VI) and FF alone in asthma. ERS. 2013.

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The *Primary Care Respiratory Update* is published quarterly and distributed to members of the Primary Care Respiratory Society UK.

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# Improving quality of life for emphysema patients

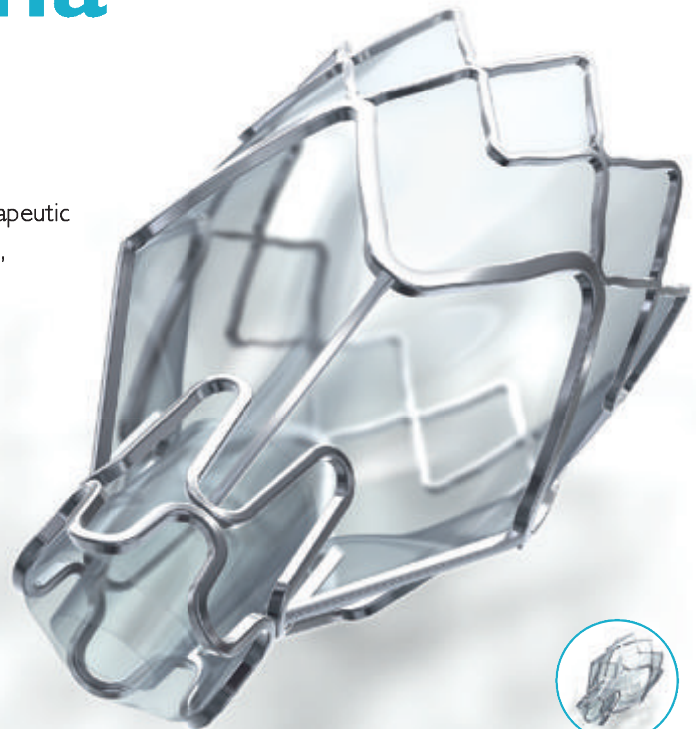


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Δ 6MWT Distance (m)	24 +/-57	31 +/-56
Δ SGRQ (points)	-10 +/-13	-13 +/-14

\*Herth FJF, Eberhardt R, Gompelmann D, et al. Radiological and clinical outcomes of using Chartis to plan endobronchial valve treatment. *Eur Respir J* 2013; 41: 302 - 308.

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- A journey with your patient - Dr Liz Moulton, GP trainer, Pontefract
- The evidence for personalised respiratory care Dr Hilary Pinnock, Allergy and Respiratory Research Group, University of Edinburgh and GP, Whitstable
- Panel discussion with speakers and invited guests from the British Lung Foundation and Asthma UK

Where is care going wrong: lessons from the National Review of Asthma Deaths

- Where is care going wrong: lessons from the National Review of Asthma Deaths - Dr Mark Levy, GP and Clinical Research Fellow, London
- Putting the lessons into practice - Professor Mike Thomas, Professor of Primary Care Research, University of Southampton and GP

Making the most of what we've got in asthma and COPD: how does it all stack up?

- Making the case for inhaled drug treatments - Dr Jon Miles, Consultant Physician and Director for Medicine, Rotherham
- Making the case for smoking cessation - Dr Noel Baxter, GP, London
- Making the case for action plans - Professor Martyn Partridge, Professor of Respiratory Medicine, Imperial College London, National Heart and Lung Institute

Grand round - lessons from the ER

Dr Iain Small, GP, Peterhead and Dr Jon Miles

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- The single most important thing you can do for your patients
- npj Primary Care Respiratory Medicine: Round up

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# Primary Care Respiratory **UPDATE**



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# Asthma Education at all levels

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educating  
people and  
transforming  
lives worldwide

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<b>Asthma</b>	Level 6 Module	13 October 2014	Warwick
<b>Asthma</b>	Level 5 Module	20 October 2014	Wiltshire
<b>Asthma</b>	Level 5 Module	10 November 2014	Warwick
<b>Asthma</b>	Level 5 Module	17 November 2014	Portsmouth
<b>Asthma Update</b> No Room for Complacency	Workshop	27 November 2014	Warwick £20 bursary discount!

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# Welcome to this PCRS-UK inaugural edition of *Primary Care Respiratory Update*

Hilary Pinnock, *Editor*



March 2014 was the last edition of the *Primary Care Respiratory Journal*. Last month, at the conference of the International Primary Care Respiratory Group (IPCRG) in Athens, it was re-launched in partnership with the Nature Publishing Group, a top international academic publisher, as *npj Primary Care Respiratory Medicine*. This important step is tribute to just how far our Journal has come.

Some of us remember the journal's very humble beginnings. I have copies of a newsletter described as the 'GPIAG news' (at the time, GPIAG stood for General Practitioners in Asthma Group) which aimed to update the membership on the activities of the group and other relevant national events. In November 1992, as *Asthma in General Practice* it began to publish review articles and clinical summaries along with some audit reports and, gradually over the years, an increasing number of research articles. It could be relied upon as a useful source of practical clinical information as well as original research which reflected our day-to-day practice and stimulated ideas (including, in 1999, the paper from Kevin Gruffydd-Jones and colleagues entitled 'Why don't patients attend the asthma clinic?' which triggered my interest in telephone consultations for asthma reviews).

The launch as the *Primary Care Respiratory Journal* in 2000 signalled the broadened respiratory agenda as well as encompassing multidisciplinary primary care. The quality and quantity of research articles that it attracted improved year by year, though it still maintained a core function of updating its readers on developments in the respiratory world. Later, the association with the IPCRG and an ever increasing quality of research submissions maintained the journal's remarkable rise as a global academic journal, gaining Medline listing in 2006 and its first impact factor in 2012. This ranked it as the second primary care specialist journal globally and nearly half way up the league

table of respiratory journals. An amazing achievement, which reflects the vision of PCRS-UK and IPCRG realised by the determination of the editors over the last two decades: Mark Levy and more recently Paul Stephenson and Aziz Sheikh.

*npj Primary Care Respiratory Medicine* will continue to publish open-access, primary care relevant research articles, as online access only (<http://www.nature.com/npjpcrm>). It will continue to commission editorials, clinical reviews and perspectives that we know from surveys are valued by practising clinicians. Education@pcrm will still be published quarterly, covering a range of practical subjects such as diagnosing breathlessness, managing 'difficult' asthma and the clinical implications of the new GOLD classification of COPD. If you haven't seen all these, they are available on the *PCRJ* website <http://www.thepcrj.org/journ/education.php>

But whilst the move to partnership with Nature Publishing Group is excellent news for securing the future success of *npj Primary Care Respiratory Medicine*, it leaves a gap in our hands – for many of you tell us that you like a paper journal that you can browse. We may live in a digital age, but reading a paper journal is still a convenient way of learning about the latest research and keeping up to date with clinical knowledge about respiratory disease. There is also a need for a means of communicating news about PCRS-UK, hearing about UK-based events and perhaps a vehicle for sharing our activities with colleagues.

All of this and more is to become the remit of the *Primary Care Respiratory Update*. I will be leading a multidisciplinary editorial team of general practitioners, practice nurses, physiotherapists and, with the help of the PCRS-UK editorial office, we will be producing a quarterly paper publication for PCRS-UK members.

- **Read about Emerging Ideas.** We know that summaries of research articles are popular as

a means of hearing about new ideas and cutting edge practice. *npj Primary Care Respiratory Medicine* plans to produce short summaries of all their original research papers. We will be selecting those of most relevance to UK practice and publishing them in *Primary Care Respiratory Update* the following quarter.

- **Journal Round-Up.** This first edition includes the familiar Journal Watch, a selection of the 'best of the rest' written by Paul Stephenson and Aziz Sheikh but, from September, Basil Penney will be leading the journal round-up by highlighting key papers of relevance to primary care.
- **Update your Clinical Practice.** We will be publishing in full one or two articles – typically clinical reviews, perspectives or education@pcrm – from the previous quarter's *npj Primary Care Respiratory Medicine*. These will be articles of practical clinical relevance which we hope will be useful in day-to-day practice – see pages 30-32.
- **Policy Round-Up.** Each quarter Bronwen Thompson will update us on the latest developments in the UK health services, including any major new reports, guidelines and other documents relevant to primary care respiratory medicine. In this first edition, Bronwen highlights the findings of the National

Review of Asthma Deaths: essential reading for everyone who provides care for people with asthma.

- **News Round-Up.** Keep up with developments from the PCRS-UK and other groups with this short digest of the latest news from PCRS-UK.
- **Delivering Excellence Locally.** This section will highlight the activities of PCRS-UK regional leads, champions and affiliated groups across the UK and will bring you the latest developments in the resources and programmes available to support you, as a PCRS-UK member, to improve care in your practice or locality. In short, this will be the newsletter of the PCRS-UK and will replace group newsletters with information about the Respiratory Leaders Programme, the Quality Award and local groups.
- **Getting the Basics Right.** In each edition of *Primary Care Respiratory Update* we will highlight a key clinical area (this quarter we are focusing on at-risk asthma in the light of the National Review of Asthma Deaths) and illustrate how PCRS-UK resources can help you and your colleagues ensure you have the basics of care right. From time to time we may publish some of our online resources, such as new 'Opinion sheets' and 'Practice tools'.

- **... and for the future?** This is a new project and offers exciting opportunities. Ideas which we have discussed include publishing reports of innovative services or audits that have changed your practice.

The aim is for the *Primary Care Respiratory Update* to become 'the essential update' for those working in UK primary care respiratory healthcare. It does not replace the *PCRJ*, but complements our newly launched scientific journal, *npj Primary Care Respiratory Medicine*, by bringing together some of the academic and clinical highlights whilst also acting as a conduit for news about primary care respiratory medicine in the UK. Our survey last year suggested that this is what you, as members of the PCRS-UK, want from a regular paper journal – but if you have other ideas please tell us! Communication works both ways, and we would like to hear from you with ideas, contributions, and letters – and maybe in the future we will move into social media with tweets and blogs.

And finally, don't keep it to yourself! One of the other advantages of a paper journal is that, when you have read it, you can leave it for colleagues in your practice to browse through over cups of coffee. Use it to spread the news about important developments in respiratory medicine, and how PCRS-UK can support quality primary care practice.

# Chair's perspective: Why do people die from asthma – have we become complacent in primary care?

Stephen Gaduzo, PCRS-UK Executive Chair



'Why Asthma Still Kills', the report of the National Review of Asthma Deaths (NRAD) published on World Asthma Day (6th May 2014), hit the headlines and features strongly in this inaugural edition of *Primary Care Respiratory Update*. My initial reactions to it were mixed.

The report is based on data from 195 people thought to have died from asthma over a 12-month period and about whom there was sufficient information to review the circumstances of the death. That is only a proportion of the deaths certified as being due to asthma and, thankfully, a very small number compared with the 5.3 million people who, according to Asthma UK, are treated for asthma.

The headline 'Asthma killing people needlessly' grabbed my attention; any death from a treatable condition is a tragedy, particularly if there were shortfalls in that individual's care. Statements such as 'a damning indictment of current routine practice' really got me thinking, given that the majority of routine asthma care takes place in primary care. The implication was that GPs and nurses in primary care are to blame, which feels tough as we are working under ever greater constraints and pressures and increasingly being told we need to do 'more for less'.

Does the NRAD report tell us anything new? The findings are depressingly similar to those found in local audits and studies for the last 3–4 decades. '70% of deaths from asthma are preventable' is a statistic that has been cited for as long as I can remember.

I am somewhat bemused when I think about the advances in drug treatments, the availability of evidence-based guidelines, the establishment of asthma clinics and asthma trained nurses since I have been in practice (and that's quite a long time now) – but have we really made no progress in preventing asthma deaths? Could it be that, by consistently and

systematically doing things right and doing the right things ([www.rightcare.nhs.uk](http://www.rightcare.nhs.uk)), we could improve outcomes and reduce avoidable asthma deaths? NRAD would tend to suggest that we could.

## Complacency in primary care?

'Complacency costs lives' was the headline statement from the Royal College of Physicians and, for me, best summarises what the report is telling us. The 195 people who died and on whom the report focused – two-thirds of whom tragically had avoidable factors that might have prevented the death – are the tip of the iceberg. The *Compare Your Care Campaign* launched by Asthma UK on World Asthma Day 2013 suggests that a staggering 86% of people with asthma may not be getting the care they need. Perhaps the complacency has arisen because of a feeling that asthma was 'sorted' with the advent of guidelines and asthma clinics? The NRAD report suggests we have a way to go.

It is by no means solely the fault of primary care that people continue to die needlessly from asthma; the report shows failings in every part of the healthcare system – from emergency services, through secondary and primary care and with patient factors also playing a key part. Nonetheless, it highlights the fact that there is a huge amount that can be done in primary care to improve routine care (see page 13 for some basic steps all practices can take).

## Responding to the challenge

Reading the NRAD report left me more determined than ever to continue the fight for improved respiratory care. PCRS-UK has had 'Optimal respiratory health for all' as its overall goal for many years now. I am inspired to do more, and reassured that PCRS-UK is heading in the right direction with our focus on *delivering excellence locally*. Once we have identified and shared best practice, only by embed-

ding it into our routine care will it make a difference.

The first of the 19 recommendations in the NRAD report is that 'every general practice should have a designated, named clinical lead for asthma'. My ambition is that this clinical lead is not just someone nominated reluctantly to take a lead in ensuring respiratory Quality and Outcome Framework (QOF) points are achieved, but a specifically trained GP or nurse (or preferably both) who are members of the appropriate professional society (yes, the Primary Care Respiratory Society UK!) which can support them in ensuring the appropriate processes and systems are in place to optimise care in the practice. PCRS-UK currently has about 750 paid/active members – that is far short of the 10,000 or so GP practices in the UK. In secondary care it is assumed that all respiratory specialists are members of the British Thoracic Society. Why is PCRS-UK membership not the norm in primary care? **Please use your contacts locally to ensure practices in your area are aware of PCRS-UK and, on the back of the NRAD report, urge them to ensure they have a respiratory lead who is properly trained and supported.**

Few of the findings in the NRAD report are new, but they come at a time when we have new opportunities to address them using, for example, computerised prescribing, powerful reporting facilities in our computerised records systems, medicines management teams advising us at the Clinical Commissioning Group (CCG)/Health Board level and data sources such as the Association of Public Health Observatories, Inhale website and the *Respiratory Atlas of Variation*. Martyn Partridge got it right in his foreword to the NRAD report in saying we must use the findings to 'unequivocally shake up the system'. **How many nurses do you know who are given the responsibility for respiratory care but have no support or training (see PCRS-UK skills document for more information on minimum standards: <http://www.pcrs-uk.org/resource/Nurse-tools/skills-levels-delivering-high-quality-respiratory-care-nurses-primary-care>)? How many practices do you know where asthma**

**care has been virtually 'abdicated' to nurses and where the GPs no longer have essential clinical skills needed to manage asthma?**

### **PCRS-UK: supporting its members to achieve NRAD recommendations**

Spurred on by the NRAD report, PCRS-UK will continue to fight for appropriate NHS incentives and levers to drive improvements in routine respiratory care. PCRS-UK already offers a wealth of clinical resources to support practices to improve the quality of routine asthma and COPD care. **What NRAD shows is that, if more professionals adopted guideline standard care, we may save some lives as well as keep people out of hospital and improve the lives of many more people with respiratory conditions.** If you ask primary care health professionals what they would want from a society like ours (and we have), the 'wish list' matches very well with the resources and support we give. That is why the PCRS-UK Executive and Trustees recently decided to make most of our resources freely available online (see news piece on page 20). I am convinced this decision will help more people to see what we have to offer and use the opinion sheets, quick reference guides, Patient Group Directions, etc, to drive improvements in the care and outcomes of their respiratory patients.

Best practice in asthma management is set out clearly in the British Thoracic Society/Scottish Intercollegiate Guideline Network (BTS/SIGN) Asthma Guideline, QOF, Asthma Quality Standards for England and in respiratory strategies in Wales and Northern Ireland. But, as the NRAD report has shown, they need embedding into routine practice. I'm sure the same principle applies to COPD. Guidelines, strategies and quality standards are only useful if patients, nurses and doctors alike are aware of them, understand them and implement them. They have to make sense in a practical way that is also realistic and achievable in everyday busy practice life.

The launch of the new PCRS-UK *Effecting Quality in Practice* (EQUIP) simple modular-

based tool (see page 25) for practices, CCGs, Health Boards and other groups, following immediately on from the NRAD report, is very timely. EQUIP provides a structured, systematic way of reviewing the respiratory care being delivered and identifies ways in which the standards of care can be optimised within a practice, or group of local practices, using our new practice improvement work sheets (see page 24) and other PCRS-UK resources. **New improvement tools are freely available to PCRS-UK members and my hope is that they will convince many more practice respiratory leads that they cannot afford not to join PCRS-UK.**

In summary, PCRS-UK's strategy – focusing on *delivering excellence locally* – is about building a network of networks, from regional leads to CCG/Health Board leads to individual leads at practice level, who can encourage excellence in respiratory care in their own local area. This could mean a small audit of respiratory care in one practice, a wider CCG initiative, or a joint project with secondary care colleagues. The launch of the EQUIP improvement modules and the practice improvement worksheets adds to the armamentarium our leads and champions have to support them in that quest. Contact your regional lead (<http://www.pcrs-uk.org/pcrs-uk-regional-leads>) to find out more.

By joining PCRS-UK, you've already shown you have a respiratory interest. If you are a member of a local respiratory interest group you may already be acting as a local lead. PCRS-UK resources can help your group. Download the resources from the website and share them at your meetings. Why not join us in seeking to improve respiratory care and get the backing of PCRS-UK by becoming a PCRS-UK champion? Together we can start to overcome the complacency in the NHS towards asthma and respiratory conditions more generally, and ensure that any future studies of asthma death do not highlight such tragic gaps in routine care.

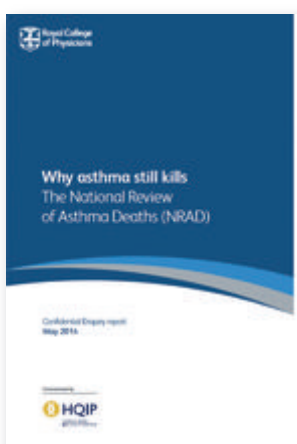


## Policy Round-Up

**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

**Why Asthma Still Kills:** The National Review of Asthma Deaths (NRAD) led by the Royal College of Physicians and involving a consortium of asthma professional and patient bodies including PCRS-UK published its report on 6th May 2014 – World Asthma Day. It consists of a year-long collation of data on all asthma deaths across the UK, with detailed information on 195 deaths. There are 19 recommendations for changes in asthma care which could reduce the number of deaths. PCRS-UK, a partner in the study, provided a succinct summary of key findings and recommendations for primary care in Chapter 8 of the report ([http://www.pcrs-uk.org/sites/pcrs-uk.org/files/files/Chapter8\\_Keyrecommendationsfor%20PrimaryCareNRAD.pdf](http://www.pcrs-uk.org/sites/pcrs-uk.org/files/files/Chapter8_Keyrecommendationsfor%20PrimaryCareNRAD.pdf)). You can view the full report at <http://www.rcplondon.ac.uk/projects/national-review-asthma-deaths>.



Read PCRS-UK's Executive Chair, Stephen Gaduzo's perspective on the NRAD report (page 9) and see how PCRS-UK resources can help you address some of the key recommendations (page 13). At the launch of the NRAD report, Professor Mike Morgan – National Clinical Director for respiratory disease at NHS England – committed to:

- Forming an implementation task force to look at how to roll out the recommendations in the report, many of which are relevant for primary care.
- Developing resources to support improvements in care including an Asthma CQUIN (Commissioning for Quality and Innovation), an asthma acute care bundle, alerts on GP computer systems to flag potentially dangerous over-prescribing of short-acting beta-agonists, long-acting beta-agonists and inhaled corticosteroids, a template to guide regular asthma review

- Considering adding asthma to the ongoing national audit programme. COPD is part of this programme, and asthma is one of five in the shortlist being considered for future addition to the programme.

### **NICE defines the role of FeNO testing in asthma diagnosis and management:**

NICE has recommended that FeNO (nitric oxide) testing is a useful additional tool for confirming suspected asthma when the diagnosis is unclear, alongside the other diagnostic approaches in the BTS/SIGN Asthma Guideline. It is also recommended as an option to support the management of asthma in people who still have symptoms despite being treated with inhaled corticosteroids. People with asthma often have inflamed lungs and breathe out higher than normal levels of nitric oxide, so FeNO testing helps to identify the presence of inflammation. NICE evaluated three pieces of FeNO testing equipment: NIOX MINO and NIOX VERO (Aerocrine) and NObreath (Bedfont Scientific Ltd).

NICE guidance: Measuring fractional exhaled nitric oxide concentration in asthma (DG12) (<http://guidance.nice.org.uk/DG12>)

### **Wales launches respiratory delivery plan:**

Wales follows Northern Ireland in publishing a comprehensive respiratory strategy – Together for Health (<http://wales.gov.uk/newsroom/healthandsocialcare/2014/140429respiratoryplan/?lang=en>). This outlines the actions needed to make a difference to the lives of the one in seven people living in Wales who have a respiratory condition. Importantly, Wales plans a comprehensive roll out of the plan in its seven Health Boards. Members in Wales should consider getting involved.



### Breathlessness tips for clinicians from IMPRESS:

([http://www.impressresp.com/index.php?option=com\\_content&view=article&id=172:impressions-31-breathlessness&catid=11:impressions&Itemid=3](http://www.impressresp.com/index.php?option=com_content&view=article&id=172:impressions-31-breathlessness&catid=11:impressions&Itemid=3)). This fully referenced paper offers guidance for clinicians who assess and care for adults with long-term breathlessness. It also provides accompanying notes to the IMPRESS breathlessness interactive algorithm (Dec 2013). It is a tool that can be used by commissioners, clinicians and patients to discuss how to integrate assessment and care for people who may have more than one condition causing their breathlessness, such as COPD, heart failure, asthma, anxiety, obesity and anaemia. The appendices offer examples of easy-to-use validated assessment tools. It was produced by a cross-specialty and multidisciplinary IMPRESS working party, including members of PCRS-UK.

### Medicines optimisation for asthma:

(<http://www.rpharms.com/promoting-pharmacy-pdfs/mo-briefing---asthma.pdf>). The Royal Pharmaceutical Society of Great Britain has produced a briefing on medicines optimisation in asthma (link), a useful evidence-based two-page document to help you involve your local pharmacists as members of the primary care team.

### A planned approach for the most vulnerable and complex patients:

NHS England has launched Transforming primary care ([https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/304139/Transforming\\_primary\\_care.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/304139/Transforming_primary_care.pdf)): This document sets out how primary care needs to change to support the most vulnerable patients with personalised proactive care. Reducing admissions continues to be a high profile area across the NHS. To support the enhanced service on unplanned admissions in England in 2014/15 (<http://www.nhsemployers.org/your-workforce/primary-care-contacts/general-medical-services/enhanced-services/enhanced-services-201415>), there is a range of tools – templates, letters, practice report, care plan – designed to assist practices in reducing unplanned admissions by, for example, proactive care planning, improving discharge processes and improving telephone access.

## In brief...

### Future of general practice: Useful reports include:

- Improving General Practice – a call to action from NHS England sets out the future challenges and direction of primary care (<http://www.england.nhs.uk/2014/03/11/cta-emerging-findings/>).
- Commissioning and funding general practice from the King's Fund (<http://www.kingsfund.org.uk/publications/commissioning-and-funding-general-practice>),
- The Nuffield Trust (<http://www.nuffieldtrust.org.uk/blog/influencing-gps-and-expanding-role-clinical-commissioning-groups>) has commented on ongoing rumblings about whether CCGs should have a greater role in determining what general practice does, and in developing primary care.
- And finally – a slideset outlining the challenges for primary care (<http://www.pcc-cic.org.uk/article/transforming-primary-care>).

**A collaborative strategy to tackle TB** is out to consultation from Public Health England (<https://www.gov.uk/government/news/phe-commits-to-tackling-tb>) – see PCRS-UK opinion sheet for helpful information on how to diagnose and manage TB in primary care <http://www.pcrs-uk.org/resource/Opinion-sheets/tuberculosis-opinion-sheet>.

### Respiratory case studies:

- Developing an Enhanced Pulmonary Rehabilitation Programme to promote self-management from Cambridge - designed to improve patients' self-management skills (<http://personcentredcare.health.org.uk/resources/developing-enhanced-pulmonary-rehabilitation-programme-promote-self-management>).
- Telephone follow-up for COPD patients completing the rehab programme from Ayrshire and Arran (<http://personcentredcare.health.org.uk/resources/telephone-follow-copd-patients-completing-rehab-programme>).

## NEW... Quality standard for pulmonary rehab from BTS

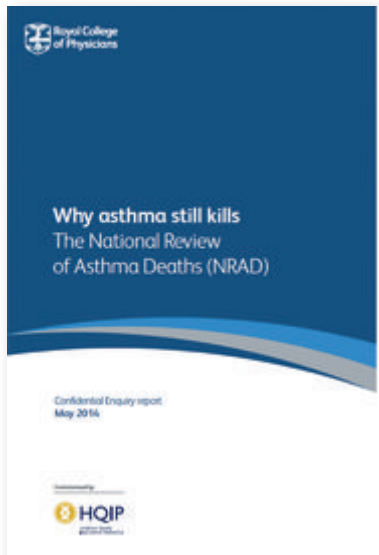
Launched in May 2014, the new British Thoracic Society Quality Standard for Pulmonary Rehabilitation – visit <https://www.brit-thoracic.org.uk/guidelines-and-quality-standards/pulmonary-rehabilitation-quality-standards/> for more information.

Don't forget to download your copy of our opinion sheet on pulmonary rehabilitation written by Dr Rupert Jones available at <http://www.pcrs-uk.org/resource/Opinion-sheets/pulmonary-rehabilitation-opinion-sheet>

## GETTING THE BASICS RIGHT

# Why Asthma Still Kills – Actions you can take now to help reduce asthma deaths

Hilary Pinnock, Tricia Bryant



### The National Review of Asthma Deaths (NRAD) report

(<http://www.rcplondon.ac.uk/projects/national-review-asthma-deaths>), launched on World Asthma Day, 6th May 2014, highlighted 19 recommendations for improvements in care, many of which are relevant to primary care.

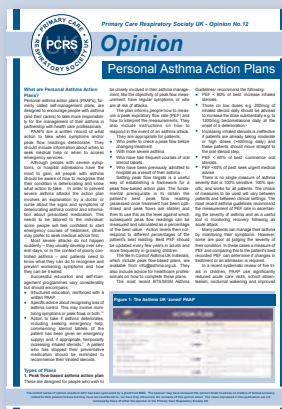
#### Some important findings from NRAD:

- In 43% of people who died there was no evidence of an asthma review in the previous 12 months and 22% had missed a routine GP appointment.



Download our asthma review opinion sheet (<http://www.pcrs-uk.org/resource/Opinion-sheets/asthma-review-opinion-sheet>) and asthma assessment and review protocol (<http://www.pcrs-uk.org/resource/Nurse-tools/protocol-asthma-assessment-and-review-primary-care-pdf>) and asthma checklist (<http://www.pcrs-uk.org/resource/Nurse-tools/asthma-clinic-checklist-pdf>) for information on what constitutes a good asthma review. Why not use this as a teaching aid in the practice to ensure the whole practice team are familiar with the essentials for asthma review?

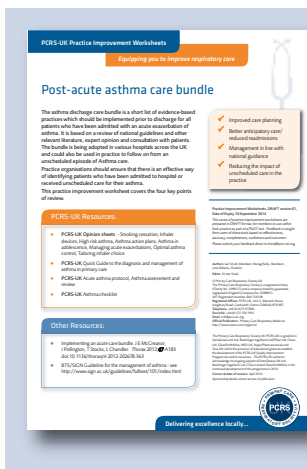
- Of those seen in primary care in the 12 months prior to death, only 24% had received a personalised asthma action plan, though British asthma guidelines have emphasised the importance of asthma self-management as a core component of a regular review for two decades.



Download our opinion sheet on personal asthma action plans (<http://www.pcrs-uk.org/resource/Opinion-sheets/personal-asthma-action-plans-opinion-sheet>). This concise guide provides useful information and advice on the use of asthma action plans in practice

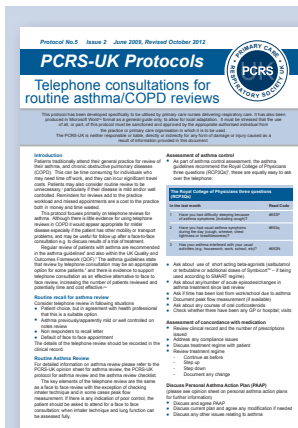
# Primary Care Respiratory UPDATE

- 45% of people died without seeking medical assistance and 50% of the deaths took place between 8am and 6pm when GP practices are open, implying that these patients were not aware of how ill they were, or were unable to access care until it was too late to get help.



Download our post-acute asthma care bundle from our website at <http://www.pcrs-uk.org/resource/Improvement-tools/post-acute-asthma-care-bundle> to help you plan and implement appropriate care for patients who have received unscheduled or emergency care for their asthma

- 86% of those who died had been prescribed inhaled corticosteroids (either as a single agent or in combination with a long-acting beta-agonist). However, 80% of these had received fewer than 12 inhalers a year and 38% had received fewer than four inhalers, which suggests considerable under-use.



Take a look at our nurse protocol on telephone consultations available at <http://www.pcrs-uk.org/resource/Nurse-tools/telephone-consultations-routine-asthma-review-protocol.pdf>. Have you considered more novel ways of engaging with your younger asthma patients and those unwilling to come into the practice for a formal review? Rather than 'exception reporting' non-attenders, consider phoning them and reviewing their control and management. They probably still need to be encouraged to attend (e.g. to check inhaler technique), but at least contact has been made and arrangements can be made for a face-to-face review.

- 21% of those who died had attended an Accident and Emergency Department (A&E) in the previous 12 months, and over half of these had presented more than once. Practices need to monitor A&E visits as an indicator of risk.



Download our opinion sheet on high risk asthma at <http://www.pcrs-uk.org/resource/Opinion-sheets/high-risk-asthma-opinion-sheet>. Why not use this as a tool at your next practice team meeting to discuss how you care for people with high risk asthma and what steps you can take to ensure you are identifying and managing people with asthma effectively

- 56% of those prescribed short-acting beta-agonists had had more than six and 39% had received more than 12 inhalers in the 12 months prior to death, which constitutes significant over-use and is another indicator of risk.



Why not participate in our simple Asthma Audit to check how you perform on achieving asthma concordance and compliance (see <http://www.pcrs-uk.org/pcrs-uk-2014-asthma-audit-information>)



## Journal Round-Up



Summary reviews of relevant papers from the top respiratory and general medical journals worldwide selected and written by Dr Paul Stephenson and edited by Professor Aziz Sheikh, Editors-in-Chief, *npj Primary Care Respiratory Medicine*

Each summary contains the name of the first author, the title of the paper, the Vancouver reference and/or doi number and a link to the abstract of the paper. Some of the papers are open-access but others are published in subscription journals so, to view the full text, you or your organisation will need to subscribe to the journal or pay to view on an individual article basis.

These reviews were originally published by the Doctors.net.uk Journal Watch service, which covers other specialties as well as respiratory medicine. Doctors.net.uk is the largest network of GMC-registered doctors in the UK. To find out about membership, visit <http://www.doctors.net.uk>.

### Delayed antibiotic prescribing strategies for respiratory tract infections

Little *et al.* Delayed antibiotic prescribing strategies for respiratory tract infections in primary care: pragmatic, factorial, randomised controlled trial. *BMJ* 2014;**348**:g1606. Published online 6 March 2014. <http://dx.doi.org/10.1136/bmj.g1606>

Acute respiratory infections are the commonest reason for acute consultation in primary care. Patients' expectations and GPs' response to these have contributed to increased antibiotic prescribing rates over the last 5 years or so. In order to reduce antibiotic prescribing, a strategy of delayed antibiotic prescription can be used and this is recommended in guidelines. However, there are different ways of providing a 'delayed' prescription. This open, parallel group, randomised controlled trial is the first to compare the effect of different delayed prescription strategies on symptom control and antibiotic use whilst controlling for other factors such as analgesia and steam inhalation. A total of 889 patients were recruited; 333 required immediate antibiotics and so were excluded from randomisation. The remaining 556 patients were randomised to a 'no antibiotic prescription' control group or to one of four delayed prescription groups – re-contact for a prescription, post-dated prescription, collection of the prescription, or being given the prescription ('patient-led'). Primary outcome measures included mean symptom severity (on a 0–6 scale) at days 2–4, antibiotic use, and patients' beliefs in the effectiveness of antibiotic use. Secondary outcomes included comparison with immediate antibiotic use. Follow-up was for at least one month. There was no significant difference in symptom severity between the no prescription group and the four delayed prescription groups [crude mean symptom score (SD) = 1.62 (0.88) for no prescription; 1.60 (0.91) re-contact; 1.82 (0.94) post-dated prescription; 1.68 (0.88) collection; and 1.75 (0.88) patient-led;  $P=0.625$ ]. There was also no significant difference between the groups in terms of symptom duration, consultation satisfaction or antibiotic use. Antibiotic use ranged from 26% in the no prescription group to 38% in the patient-led group. Patients given immediate antibiotics almost invariably used them (antibiotic use 97%) and strongly believed in them (93%), but showed

no benefit in terms of symptom severity or duration. Therefore, strategies for delayed antibiotic prescription reduced antibiotic use to less than 40%, resulted in similar symptom scores to patients given immediate prescription, and there was no significant difference between the four delayed prescription strategies.

### Wheezing phenotypes in young children

Cano-Garcinuno *et al.* Wheezing phenotypes in young children: an historical cohort study. *Prim Care Respir J* 2014;**23**(1):60-66. <http://dx.doi.org/10.4104/pcrj.2014.00008>

This interesting cohort study involved a detailed medical records review of 3,739 preschool children from 29 primary care centres in northern Spain. The records were reviewed for wheezing episodes in the first 36 months of life. The aim was to clarify the natural history of early childhood wheezing by identifying wheezing phenotypes, describing their incidence trends, and investigating any relationship with asthma at the age of 6 years. The authors used fairly innovative statistical techniques such as latent class analysis and linear joinpoint regression in order to obtain a 'high resolution analysis of incidence'. They identified four different phenotypes: a 'never/infrequent' (NIW) wheezing phenotype (65.4%); 'transient wheeze' (TW), with a fast rise in incidence of wheezing from birth up to a median age of 6 months followed by a fast drop in incidence (18.3%); 'persistent wheeze' (PW), again with a fast rise in wheezing incidence to a peak at 6 months followed by a slow descent, and characterised by recurrent episodes (6.6%); and finally a 'late wheeze' (LW) phenotype which exhibited delayed onset wheezing only perceptible from the age of 4 months with a median age of first onset at 19 months, a slow constant rise in incidence up to the age of 3 years, and a significant relationship with allergic asthma at the age of 6 years (9.7%). The three wheezing phenotypes showed an increased risk of asthma, but this was most evident for the LW phenotype. The authors conclude that the TW and PW phenotypes have an identical early onset, so it is virtually impossible to give a prognosis for wheezing children presenting in the first year of life; furthermore, the LW phenotype eventually becomes the most common type of wheezing and shows an increased risk of persistent al-

lergic asthma. The excellent linked editorial by Brand (<http://dx.doi.org/10.4104/pcrj.2014.00010>) puts these findings into context; however, he concludes that predicting the outcome of wheeze in preschool children still remains 'mission impossible'.

### Hospital resources for acute COPD care: the European COPD Audit

Lopez-Campos *et al.* Variability of hospital resources for acute care of COPD patients: the European COPD Audit. *Eur Respir J* 2014;**43**:754-62. <http://dx.doi.org/10.1183/09031936.00074413>

This ERS-funded COPD audit was designed as a pilot study to evaluate clinical practice variability and factors which relate to various outcomes following hospital admission for COPD across Europe. In effect, it is a prospective, observational, non-interventional cohort study. The first phase was for 8 weeks, during which all consecutive patients admitted with a COPD exacerbation to 425 hospitals from 13 countries were identified. Data were collected on clinical practice and the hospital resources and organisation devoted to COPD acute care. This paper reports on the hospital resources and organisation component, with particular emphasis on hospital size, resources, organisation of care and adherence to clinical guidelines. Participating hospitals were categorised into tertiles based on these data. The mean number of beds per tertile was 220 (lower), 479 (middle) and 989 (upper). As expected, there was considerable variability between different sizes of hospitals and between countries. Larger hospitals were more likely to have more resources and more staff, but this did not imply better access to services or a significant difference in adherence to guidelines. The authors express particular concern about those hospitals where strongly evidence-based services are not available – for example, intermediate care units, and invasive and non-invasive ventilation. This study has shown huge variation in both the resourcing and organisation of care amongst European hospitals caring for acute COPD admissions. The hope is that this information will help managers and policy makers to evaluate the resources available and to make appropriate changes to improve acute COPD care.

### Adherence determines asthma control in preschool children

Klok *et al.* It's the adherence, stupid (that determines asthma control in preschool children)! *Eur Respir J* 2014;**43**:783-91. <http://dx.doi.org/10.1183/09031936.00054613>

The aim of this prospective observational study from Groningen in the Netherlands was to explore the relationship between adherence to inhaled corticosteroids (ICS) and long-term asthma control in young children aged 2–6 years with asthma. 81 children were closely followed-up in an extensive 'management programme' after having been referred by their GP to the hospital-based paediatric clinic. Demographic and clinical data were collected, as well as data on lung function, asthma control (using the Asthma Control Questionnaire, ACQ) and parental quality of life. Adherence was measured daily using the Smartinhaler, a validated electronic device which logs the date and time of each ICS actuation. Follow-up was for 12 months. Median [interquartile range] adherence was 87% [70–94], and 64 (79%) had well-controlled asthma throughout the year. Adherence of >80% was associated with better asthma control, and children with persistent mild symptoms had lower adherence rates [ $P=0.028$ ]. Therefore, as expected, adherence to ICS was an independent strong predictor of long-term asthma control, with the

highest levels of control being in children with adherence rates >80%.

### Diagnosing obstructive sleep apnoea: the value of the Elbow Sign

Fenton *et al.* The utility of the Elbow Sign in the diagnosis of OSA. *Chest* 2014;**145**:518-24. <http://dx.doi.org/10.1378/chest.13-1046>

The 'Elbow Sign' – this has to be the best named clinical sign in respiratory medicine [though we will be delighted to receive your comments on this!]. These authors devised an obstructive sleep apnoea (OSA) prediction questionnaire consisting of only two questions: (1) Does your bed partner ever poke or elbow you because you are snoring? (2) Does your bed partner ever poke or elbow you because you have stopped breathing? They administered the questionnaire prospectively to 128 patients attending a sleep disorders clinic prior to their sleep study. Data were also collected on age, sex, body mass index (BMI), and Epworth Sleepiness Scale (ESS) score. The odds ratio (OR) of having mild OSA (apnoea-hypopnoea index [AHI] >5/hour) after answering 'Yes' to the first question about snoring was 3.9. Similarly, the OR was 5.9 after answering 'Yes' to the second question about apnoeic spells. These odds ratios were irrespective of sex, BMI, or ESS score, though age >50 years demonstrated weaker association. Subgroup analysis showed that, in men with a BMI >31, a positive Elbow Sign had a specificity of 96.6% for a diagnosis of OSA. An interesting study, and a very simple user-friendly two-question questionnaire which warrants further evaluation in primary care contexts.

### Are there missed opportunities for diagnosing COPD in general practice?

Jones *et al.* Opportunities to diagnose chronic obstructive pulmonary disease in routine care in the UK: a retrospective study of a clinical cohort. *Lancet Respir Med* 2014;**2**:267-76. [http://dx.doi.org/10.1016/S2213-2600\(14\)70008-6](http://dx.doi.org/10.1016/S2213-2600(14)70008-6)

This is an interesting retrospective cohort study analysing patterns of healthcare use and co-morbidities present in patients prior to a diagnosis of COPD. Using 20 years' primary care data from the UK General Practice Research Database and the Optimum Patient Care Research Database, the authors analysed the electronic records of 38,859 patients aged 40 or over for at least 2 years before and 1 year after the diagnosis of COPD. A number of clinical scenarios were considered to be potential 'missed opportunities' if they did not lead to a diagnosis of COPD: these included infective and non-infective lower respiratory tract infections, other lower respiratory consultations culminating in a prescription for antibiotics or oral steroids, and requests for a chest X-ray. According to these criteria, missed opportunities for diagnosis occurred in 32,900 of the 38,859 patients (85%) in the 5 years before diagnosis, in 12,856 out of 22,286 patients (58%) in the 6–10 years before diagnosis, and in 3943 of 9351 patients (42%) in the 11–15 years before diagnosis. Over the 20-year period, there was a reduction in the age at diagnosis of 0.05 years per year [95% CI 0.03 to 0.07], and the prevalence of all co-morbidities increased except for bronchiectasis. In the 2 years before diagnosis 6897 patients had a chest X-ray and, of these, 2296 (33%) went on to have spirometry. The authors conclude that opportunities to diagnose COPD are being missed. Of course, these primary care data go back to 1990, well before any COPD guidelines were published, so it is hardly an up-to-date rep-

resentation of current UK primary care practice. And whether or not these clinical scenarios were truly 'missed opportunities' is open to debate. Nevertheless, it does highlight once again the need for COPD case-finding strategies to maximise the efficiency of the diagnostic process.

### **Risk stratification for primary care-based screening of immigrants for latent TB**

Panchal *et al.* The effectiveness of primary care based stratification for targeted latent tuberculosis infection screening in recent immigrants to the UK: a retrospective cohort study. *Thorax* 2014;**69**:354-62. <http://dx.doi.org/10.1136/thoraxjnl-2013-203805>

We have recently published a 'case-based learning' article on tuberculosis (TB) presenting as indolent pneumonia in an Israeli immigrant from Ethiopia (<http://dx.doi.org/10.4104/pcrj.2014.00001>), together with an accompanying article focusing on TB management and immigrant screening (<http://dx.doi.org/10.4104/pcrj.2014.00019>). This is an 11-year retrospective cohort study on the effectiveness of a targeted screening programme for latent TB infection at the time of primary care registration for recent immigrants to Leicestershire, UK. The authors constructed a cohort of 59,007 new immigrant patient registrations in the county since January 2000. Of these, 28,438 (48%) were from countries with a WHO TB incidence of >150/100,000. Following registration, patients' details appear on the NHS Patient Registration Data System (PRDS). The PRDS contains a specific code, 'Flag-4', which signifies a first registration episode for individuals having either a previous address outside the UK or residence abroad of >3 months; the authors have used this Flag-4 PDRS data as a resource for identifying immigrants. TB diagnosed >6 months after new patient registration was considered potentially preventable with screening. The primary outcomes were the potentially preventable proportion of foreign-born TB cases, and the number needed to screen (NNS) to identify one potentially preventable case, stratified by age and region of origin. The median time to Flag-4 primary care registration after UK entry was 181 days [IQR 25–950 days], but this was significantly longer for immigrants arriving from high TB incidence countries. There were 857 foreign-born TB cases over the 11 years; 810 of these (94.5%) were registered on the PRDS and 458 (53.4%) were captured on the Flag-4 code. 250 cases (29%) were potentially preventable in Flag-4 coded immigrants, and overall 511 cases (60%) were potentially preventable amongst PDRS-registered immigrants. Targeted screening was most effective for 16–35 year-olds from regions of WHO medium TB incidence (150–499/100,000); NNS was 65 [95% CI 57 to 74], preventing 159 (18.7%) cases. The authors conclude that screening for latent TB at primary care registration is an effective strategy for identifying immigrants at high risk of developing TB. The use of the 'Flag-4' registration is an original idea which they propose warrants further evaluation.

### **UK general practice COPD distribution according to ABCD groups**

Haughney *et al.* The distribution of COPD in UK general practice using the new GOLD classification. *Eur Respir J* 2014;**43**:993-1002. <http://dx.doi.org/10.1183/09031936.00065013>

This retrospective cohort study is the first to describe the distribution of COPD patients in a representative sample of UK primary care according to the new GOLD 2011 'ABCD' groups rather than the

old '1234' grades. As we commented in our January Journal Watch review on the paper by Boland *et al.* (which compared the two different GOLD classifications in terms of their association with health status and costs) (<http://dx.doi.org/10.4104/pcrj.2014.00002>), the rationale behind the new classification is that it incorporates assessment of symptoms (using the modified MRC dyspnoea scale and the COPD Assessment Test (CAT)) as well as exacerbation risk, unlike the old '1234' grades which were based on lung function only. The authors used the UK National Service for Health Improvement (NSHI) database as well as electronic and paper records from 80 general practices to construct a cohort of 9219 patients with a Read code diagnosis of COPD; of these, 7480 had spirometry data available, 6283 had a valid FEV1 and modified MRC (mMRC) score available, and 221 had a valid FEV1 and valid CAT score. The patient distribution according to the new 'ABCD' groups was: Group A (low risk, few symptoms) 36.1%; Group B (low risk, more symptoms) 19.1%; Group C (high risk, few symptoms) 19.6%; Group D (high risk, more symptoms) 25.3%. This was in contrast to the distribution according to the old '1234' grades: Grade I (mild) 17.1%; Grade II (moderate) 52.2%; Grade III (severe) 25.5%; Grade IV (very severe) 5.2%. The key findings are that a greater proportion of COPD patients were identified as being at high risk of adverse health outcomes by the new 'ABCD' group classification, and the new classification had more patients in both the milder and more severe groups compared with the old one. Groups B and D, the two groups with high levels of symptoms, also had higher levels of comorbidities, and there was a discrepancy between FEV1 and exacerbation risk: 20% of patients with FEV1 >50% had >2 exacerbations whereas 70% of patients with FEV1 <50% had either no or only one exacerbation in the previous 12 months.

### **Changes in classification and treatment of preschool wheezing since 2008**

Brand *et al.* Classification and pharmacological treatment of preschool wheezing: changes since 2008. *Eur Respir J* 2014;**43**:1172-7. <http://dx.doi.org/10.1183/09031936.00199913>

This is a short and very readable review relevant to all GPs and paediatricians. It reviews the evidence published since the original 2008 ERS Task Force report on the classification and management of preschool wheezing, and the authors have updated some of the original 2008 recommendations. Many preschool children with wheeze become symptom-free between the ages of 3 and 8, which differentiates them from those who have persistent asthma in later childhood and in adulthood. The original 2008 report distinguished between 'episodic viral wheeze' and 'multiple-trigger wheeze', and this distinction has become widely accepted in clinical care. However, given the heterogeneity of preschool wheezing in this age group, it has since become clear that this distinction is not as clear-cut as suggested in 2008. Wheeze patterns vary over time and with treatments, there is a large overlap between episodic viral wheeze and multiple-trigger wheeze, and the severity and frequency of episodes seems to be at least as important as trying to distinguish between the two groups. In general, inhaled corticosteroids (ICS) remain first-line treatment for multiple-trigger wheeze, but ICS or montelukast may be considered for episodic viral wheeze with frequent or severe episodes. Controller treatment with ICS or montelukast should be given as a trial of treatment, and should be discontinued if shown to have no benefit. Once on controller treatment, the lowest effective dose should be used and, if the child has

been symptom-free for 3 months on low-dose treatment, then treatment should be stopped. Oral corticosteroids should not be used for mild-to-moderate wheezing episodes and should only be used for severe episodes in children who are admitted to hospital – in fact, even in these children, the evidence for oral steroid use is not robust. The presence of atopy does not predict the response to controller therapy. Regular review of these children to evaluate the response to treatment and any changes in symptom pattern is the key to sound management.

### **Rapid lung function decline in smokers may be attenuated by ACE inhibitors**

Petersen *et al.* Rapid lung function decline in smokers is a risk factor for COPD and is attenuated by angiotensin-converting enzyme inhibitor use. *Chest* 2014;**145**:695-703.

<http://dx.doi.org/10.1378/chest.13-0799>

Using longitudinal data on 1170 ever-smokers who were recruited into the Lovelace Smokers cohort, all of whom had repeat lung function tests over at least 3 years, these authors set out to characterise the rate of post-bronchodilator FEV1 decline in ever-smokers. They also sought to compare the risk of COPD between those with rapid FEV1 decline and others, and to see if a number of pre-selected drugs might influence this rate of FEV1 decline. The 1170 subjects included 809 ever-smokers who had no spirometric abnormality at baseline. Mean follow-up was 5.9 years. From the FEV1 values performed at all examinations during follow-up, the longitudinal absolute decline in post-bronchodilator FEV1 was annualised and subjects were categorised into those with rapid decline (>30mL/year), normal decline (0–29.9mL/year), or no decline. 32% of ever-smokers exhibited rapid decline. In the subjects with no baseline spirometric abnormality, rapid decline was associated with an increased risk of incident COPD [P=0.003]. The use of angiotensin-converting enzyme (ACE) inhibitors at baseline was protective against rapid decline, particularly if patients had cardiovascular disease, hypertension or diabetes [P<0.02 for all analyses]. It will be interesting to see further research on this potentially protective role of ACE inhibition.

### **Nebulised budesonide ineffective in preventing hospital admission of children with acute severe asthma**

Alangari *et al.* Budesonide nebulization added to systemic prednisolone in the treatment of acute asthma in children; a double-blind randomized, controlled trial. *Chest* 2014;**145**:772-8. <http://dx.doi.org/10.1378/chest.13-2298>

The aim of this double-blind, placebo-controlled, randomised trial was to assess the efficacy of nebulised budesonide in addition to standard treatment in the management of moderate-to-severe asthma in children aged 2–12 years in the emergency department setting. Standard treatment included salbutamol, ipratropium, and a single dose of oral prednisolone (at a dose of 2mg/kg) at the start of treatment. The primary outcome was hospital admission within 4 hours. In order to determine the degree of asthma severity, children were assessed immediately and graded according to a clinical score of 5–15, with 15 signifying the most severe acute asthma. Data were collected on 906 emergency department visits, and patients were randomised to receive either nebulised budesonide 1500mcg [n=458] or placebo [n=448]. Overall, 75 children in the budesonide group (16.4%) and 82 children in the placebo group

(18.3%) were admitted, and this difference was not significant [odds ratio (OR) 0.84; 95% CI 0.58 to 1.23]. However, a subgroup analysis of the most severe cases (i.e. those children with a baseline clinical score of 13–15) showed a significant difference between the two groups, with 27/76 (35.5%) children admitted from the budesonide group and 39/73 (53.4%) admitted from the placebo group [OR 0.42; 95% CI 0.19 to 0.94]. Therefore, overall this was a negative study, but nebulised budesonide may possibly be effective in reducing hospital admission in children with more severe acute asthma.

### **Smoke-free legislation is associated with reductions in preterm births and hospital admissions for childhood asthma**

Been *et al.* Effect of smoke-free legislation on perinatal and child health: a systematic review and meta-analysis. *Lancet* 2014;**383**:1549-60. [http://dx.doi.org/10.1016/S0140-6736\(14\)60082-9](http://dx.doi.org/10.1016/S0140-6736(14)60082-9)

This systematic review and meta-analysis has considerable societal implications, and provides strong support for World Health Organization (WHO) recommendations to create smoke-free environments. The aim was to assess the effect of smoke-free legislation on perinatal and child health, specifically preterm births, low birthweight, and hospital attendances for asthma. The authors searched 14 online databases back to 1975 for published studies, the WHO Clinical Trials Registry for unpublished studies, and screened reference lists and contacted international experts to ensure that no study had been missed. Studies for inclusion had to have appropriate designs according to the Cochrane Effective Practice and Organisation of Care, and had to contain data on associations between smoking bans in workplaces, public places, or both, and one or more predefined perinatal or child health indicator. 11 studies were included in the final analysis; all used an interrupted time-series design and were published between 2008 and 2013. Five were North American studies describing local bans and six were European studies describing national bans. There were combined data on more than 2.5 million births and nearly 250,000 asthma exacerbations. Meta-analysis of four studies showed that smoke-free legislation was associated with reductions in preterm births [-10.4%; 95% CI -18.8% to -2.0%], and three studies showed reductions in hospital attendances from asthma [-10.1%; 95% CI -15.2% to -5.0%]. There was no statistically significant association between smoke-free legislation and low birthweight [six studies, reduction of -1.7%; 95% CI -5.1% to 1.6%]. This study therefore provides convincing evidence of the benefits of smoke-free legislation.

### **Accuracy and discrimination of fixed FEV1/FVC ratio versus lower limit of normal (LLN) ratio for diagnosing COPD**

Bhatt *et al.* Comparison of spirometric thresholds in diagnosing smoking-related airflow obstruction. *Thorax* 2014;**69**:410-15. <http://dx.doi.org/10.1136/thoraxjnl-2012-202810>

Ever since the GOLD guidelines used a fixed FEV1/FVC ratio of <0.7 to define COPD, controversy has persisted over whether use of the lower limit of normal (LLN) for the FEV1/FVC ratio would be better. Given that the normal FEV1/FVC ratio reduces with age, the criticism of the fixed 0.7 ratio is that it tends to overestimate the prevalence of COPD in the elderly but then underestimates the diagnosis in younger (especially taller) patients. This important study is a bit like a judicial review for the protagonists in the fixed ratio versus LLN debate. Using spirometric data from 7743 current and

former smokers aged 45–80 years with and without airflow obstruction previously recruited into the large COPDGene study, the authors compared the accuracy and discrimination of the two COPD spirometric definitions using CT-defined emphysema and gas trapping as the disease 'gold standard'. There was good agreement between the two definitions [ $\kappa = 0.85$ ; 95% CI 0.83 to 0.86]. However, in 7.3% of cases (i.e. 566/7743 subjects) there was discordance between the two definitions; this discordant group consisted of two subsets – those with a fixed ratio-only diagnosis (the vast majority,  $n=548$ ), and those with a LLN-only diagnosis ( $n=18$ ). Fixed ratio-only patients were more likely to be older, male, to have a greater smoking history, and had a greater degree of CT-defined emphysema [4.1% vs. 1.2%;  $P=0.004$ ] and gas trapping [19.8% vs. 7.5%;  $P<0.001$ ] than the LLN-only group. The fixed ratio-only group also had more emphysema, gas trapping, and bronchial wall thickening than the 'at risk' smokers without any evidence of airflow obstruction [e.g. odds ratio for emphysema 1.12; 95% CI 1.09 to 1.15]. Over the follow-up period, the fixed ratio-only group had more exacerbations than smoking controls. The authors conclude that, compared with the fixed 0.7 ratio, the use of the LLN FEV1/FVC ratio fails to identify a number of patients with significant pathology and morbidity. So, in terms of a CT-defined diagnosis, perhaps the fixed ratio proponents might have won the argument?

#### Weight loss in obese patients with asthma improves asthma control

Dias-Junior *et al.* Effects of weight loss on asthma control in obese patients with severe asthma. *Eur Respir J* 2014;**43**:1368-77. <http://dx.doi.org/10.1183/09031936.00053413>

In this open, randomised, controlled, 6-month, parallel-group study, patients with severe uncontrolled asthma and moderate obesity (body mass index  $>30$  kg/m<sup>2</sup>) were randomised in a 2:1 ratio to an intensive weight loss programme (low calorie intake and use of sibutramine and orlistat) [ $n=22$ ] or to usual care [ $n=11$ ]. There was a 3-month run-in period during which patients demonstrated lack of asthma control according to GINA criteria. The primary outcome was asthma control according to the Asthma Control Questionnaire (ACQ). Secondary outcomes included the Asthma Control Test (ACT), lung function, the St George's Respiratory Questionnaire (SGRQ), daily use of asthma medication, percentage of asthma-free days, and asthma exacerbations. Of the 22 patients in the treatment group, 12 achieved the weight loss goal of  $>10\%$  of body weight. There was a statistically significant improvement (reduction) in mean ACQ score in the treatment group [mean $\pm$ SE ACQ score 3.02 $\pm$ 0.19 at baseline, 2.25 $\pm$ 0.28 at 6 months] versus the control group [2.91 $\pm$ 0.25 at baseline, 2.90 $\pm$ 0.16 at 6 months;  $P=0.001$ ]. In particular, the change in ACQ reached clinical significance (a change of  $>0.5$ ) in 11 of the 12 patients who lost  $>10\%$  of their baseline weight. Forced vital capacity also increased significantly in the treatment group [2.92 $\pm$ 0.17L at baseline, 3.16 $\pm$ 0.16L at 6 months] compared with the control group [2.55 $\pm$ 0.11L at baseline, 2.48 $\pm$ 0.12L at 6 months;  $P=0.002$ ]. There were no other statistically significant changes in markers of airway inflammation or bronchial reactivity. The authors conclude that weight loss improves asthma control in obese patients with severe asthma, but that this occurs by means other than changes in airway inflammation.

#### Pharmacist-led multidisciplinary management of maternal asthma

Lim *et al.* Multidisciplinary Approach to Management of Maternal Asthma (MAMMA): a randomised controlled trial. *Chest* 2014;**145**:1046-54. <http://dx.doi.org/10.1378/chest.13-2276>

This is a small but interesting randomised controlled trial from two large Australian maternity hospitals which evaluated the effect of a pharmacist-led intervention involving multidisciplinary care, education, and regular monitoring on improving asthma control in pregnant women. Pregnant women  $<20$  weeks gestation were randomised to the intervention [ $n=29$ ] or to usual care [ $n=29$ ] and followed up through the rest of their pregnancy. The two primary outcomes were change in the Asthma Control Questionnaire (ACQ) score at 3 and 6 months, respectively. In the intervention group, the mean $\pm$ SD ACQ score decreased (i.e. improved) by 0.46 $\pm$ 1.05 at 3 months and by 0.89 $\pm$ 0.98 at 6 months. In the control group, the ACQ score reduced by 0.15 $\pm$ 0.63 at 3 months and by 0.18 $\pm$ 0.73 at 6 months. The difference between the two groups, adjusting for baseline scores, was -0.22 [95% CI -0.54 to 0.10] at 3 months and -0.60 [95% CI -0.85 to -0.36] at 6 months, and the 6-month difference was both statistically [ $P<0.01$ ] and clinically significant (i.e. a difference in ACQ score of  $>0.5$ ). None of the pregnant women in either group required hospital admission, oral corticosteroid treatment, or time off work during the trial. This is, of course, a very small trial, but these results seem encouraging. The authors conclude that this sort of intervention could be widely implemented in routine clinical practice, but larger trials will be required first.

#### Inhaled corticosteroid treatment for adult asthma increases five-fold over 18 years

Ekerljung *et al.* Five-fold increase in use of inhaled corticosteroids over 18 years in the general adult population in West Sweden. *Respir Med* 2014;**108**:685-93. <http://dx.doi.org/10.1016/j.rmed.2014.02.016>

In this study from West Sweden, the authors randomly selected patients who had completed a population survey on respiratory symptoms, and also recruited patients with known asthma; a total of 964 patients with asthma were finally recruited. Data were collected in 2010. The aim was to study the pattern of asthma medication use and its determinants, and to compare this with data from a previous survey in 1992. They categorised asthma patients into those with 'multi-symptom asthma' and those with 'other' asthma (i.e. with fewer symptoms). In 2010, 11% of the population was using asthma medication: 4.4% were using inhaled corticosteroids (ICS) together with long-acting beta2-agonist (LABA) treatment; 3.3% were using ICS alone; and 3.2% were using short-acting beta2-agonists (SABA) only. Compared to 1992, use of asthma treatment had increased by 54%, and the use of ICS had increased from 1.5% to 7.7% (i.e. a greater than five-fold increase). Patients with multi-symptom asthma were (not surprisingly) using asthma medication more frequently and at higher doses. It's interesting to see the shift in prescribing patterns, and the doctors in West Sweden should be congratulated on the dramatic increase in ICS prescribing (and patient use) over this 18-year period. The authors also highlight the need to assess those patients with 'multi-symptom asthma' to see whether they are being undertreated or are non-compliant.

## PCRS-UK News Round-Up

### AFFILIATION TO PCRS-UK OPEN TO ANY LOCAL HEALTH PROFESSIONAL GROUP

PCRS-UK introduced an affiliation process for local nurse groups some years ago. The number of groups affiliated to PCRS-UK has grown steadily and we are delighted to have 52 local groups now affiliated to the PCRS-UK. Many of these groups have evolved over the years from small practice nurse forums to larger multi-disciplinary groups. Aware of the myriad of different types of respiratory groups and networks across the UK, from clinical update groups to commissioning networks, PCRS-UK is delighted to extend its affiliation process to any local health professional group or network whose work is relevant to respiratory care in the primary care community (see pages 22 and 23).

### NEW PCRS-UK QUALITY IMPROVEMENT TOOLS NOW AVAILABLE

Read about the new EQUIP improvement modules and supporting practice improvement worksheets on page 24. Visit <http://www.pcrs-uk.org/resource-types-improvement-tools> (make sure you are logged in first as these are member-only access) to download and use the tools.

### STRONG PCRS-UK REPRESENTATION IN THE NATIONAL REVIEW OF ASTHMA DEATHS

PCRS-UK was well represented at the launch of the report from the National Review of Asthma Deaths (NRAD),

with Professor Mike Thomas presenting on 'What the NRAD report means for primary care'. Mike and Dr Kevin Gruffydd-Jones have represented PCRS-UK on the NRAD Steering Group throughout the confidential enquiry and we were delighted when PCRS-UK was asked to contribute a section to the report summarising the key findings and recommendations for primary care. Many PCRS-UK members contributed to the panels which reviewed the clinical information on each case and come to a view on whether there were factors involved in each death that could have been avoided. All reviewers are acknowledged and thanked in the report. The key findings and implications for primary care are reviewed extensively in this edition of *Primary Care Respiratory Update* (see pages 9 and 13).

### NEW STREAMLINED PCRS-UK MEMBERSHIP SCHEME

The PCRS-UK premium, e-connect, and practice membership schemes were rationalised into a single individual membership scheme on 1 June 2014, with a single membership fee of £59. All existing members have been notified of the change and all have been transferred to the new scheme for the remainder of their current membership period at no additional cost to them.

The practice and e-connect schemes were introduced 3 years ago in an attempt to reach out to a far wider group of practices and primary care health professionals responsible for respiratory care. The introduction of these schemes coincided with a decision to restrict PCRS-UK resources to members only. One of the main selling points of the e-connect and practice schemes was access to a wealth of primary care respiratory resources, whilst the premium scheme continued to include, in

addition, a free hard copy of the *PCRJ*, discounts on registration to the PCRS-UK national conference and access to the Respiratory Leaders Programme. Whilst the premium scheme continued to thrive, uptake of the new e-connect and practice schemes, despite extensive promotion, has been very poor and the costs of running them cannot be justified.

### OPEN ACCESS TO A WEALTH OF PCRS-UK RESOURCES

Experience with the e-connect and practice schemes has shown that primary care health professionals, at least in the current NHS climate, are not willing to pay for educational tools and resources and expect them to be freely available via the internet.

The PCRS-UK Education Committee argued in February that the main driver for joining a society such as PCRS-UK is a sense of community and belonging, alongside a shared concern for professional accountability and development. Access to higher added-value tools and resources such as the new PCRS-UK improvement tools is seen as attractive for anyone with a lead role in respiratory medicine, but routine information of the type freely available from multiple open-access sources is not a strong reason to join.

A decision has therefore been made by the PCRS-UK Executive and Trustees to provide open access to all the PCRS-UK main clinical resources such as our opinion sheet series and quick guides, to ensure they are more widely used. Our new quality improvement tools and resources for respiratory professional development will remain member only.

## Delivering Excellence Locally

A round-up of the activities of PCRS-UK regional leads, champions and affiliated groups from around the UK plus the latest PCRS-UK developments to equip you to improve respiratory care locally.



**June Roberts, Steve Holmes, Co-Chairs PCRS-UK Regional Development, Sara Askew, PCRS-UK Development Director**

Our strategy '*Delivering excellence locally*' focuses on continuing to build on our network of passionate and enthusiastic PCRS-UK national and regional leads, local champions and local group leaders who, supported by PCRS-UK (see box), are inspired to drive excellence in respiratory care in their own locality. Our vision is to develop respiratory networks and leaders across the UK who will link up, share experiences, knowledge, resources and help drive implementation of quality respiratory services to ensure patients receive optimal care.

The national and regional leads have already been busy this year contacting local people with influence and respiratory champions, setting up network meetings in their locality, and promoting the PCRS-UK resources available to support clinicians working to improve respiratory care. We are hoping that you will have met or had contact from your local PCRS-UK lead; if not, why not contact them and find out what plans they have. You can also share any exciting respiratory projects or local initiatives in which you are involved and get their support (contact details at <http://www.pcrs-uk.org/pcrs-uk-regional-leads>).

We are delighted that more than 50 members are already signed up as PCRS-UK local champions, but we are keen to partner with more of you so that we can give you the support you need to take the lead, motivate and inspire best practice in your locality. If you want to develop a local network in your area, work with like-minded colleagues and be better equipped with the knowledge and tools to become more empowered to take the lead, then get involved today and sign up to be a PCRS-UK champion.

If you would like to join us as a local champion and benefit from PCRS-UK support to influence and improve respiratory care in your area, please contact [mel@pcrs-uk.org](mailto:mel@pcrs-uk.org) and become a part of our inspiring community!

### PCRS-UK: Equipping you to improve respiratory care

Whether you are a clinical commissioning (or Managed Clinical Network) lead concerned to address respiratory care across a group of practices (e.g. CCG, health board) or a practice lead keen to improve respiratory care within your own practice, PCRS-UK offers a comprehensive programme of support (available by joining PCRS-UK):

The **EQUIP improvement modules** guide you through looking at how you are doing, helping you with data sources, search and audit tools and providing links to a range of PCRS-UK tools and resources.

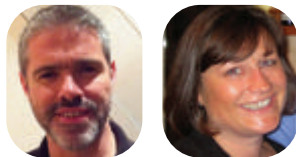
**PCRS-UK Practice Improvement Worksheets** helps you/your practice address key areas identified from improvement through step-by-step workflow sheets (or disease management algorithms), supported by quick guides, opinions sheets, PGDs, protocols and check lists. These resources, available through the PCRS-UK website, provide succinct guidance and information designed specifically for primary care health professionals.

The **PCRS-UK Quality Award - recognising quality care in practice**, is available for practices providing a high standard of respiratory care (who may, for example, have worked through the EQUIP modules and associated practice improvement worksheets) to apply for and achieve formal recognition of the quality of care they are providing.

Through the **PCRS-UK affiliated local groups' programme**, we can support you to create and implement a respiratory interest group or network (with access to PCRS-UK regional leads/champions). Local groups/networks help to galvanise and support change and provide on-going support/education for primary care health professionals locally.

Respiratory clinical leadership development and support is available through the **PCRS-UK Respiratory Leaders Programme**. The PCRS-UK Respiratory Leaders Programme offers national/regional training workshops and on-going support to enable primary care health professionals to take the lead, motivate and inspire best practice within their locality.

## Unlock, explore and achieve your leadership potential with the Respiratory Leaders Programme



**Noel Baxter**, *Chair PCRS-UK, Respiratory Leaders Team*,  
**Sara Askew**, *PCRS-UK Development Director*

Join the Respiratory Leaders Programme and we'll support you to take the lead, motivate and inspire best practice within your sphere of influence whether it be in a practice, neighbourhood, CCG or Health Board role. The leadership scheme enables any health professional working with primary care to take the next step. Plus, it's FREE to get involved if you're a PCRS-UK member. The programme includes two knowledge, networking and skills workshops per year. They are facilitated by GPs and nurses working within community, integrated and primary care settings today who bring their own experiences and skills to support you to develop in an informal, safe and inspirational environment.

In 2014 we are running two linked workshops which will focus on setting up a project (Workshop 1) and then implementing the project (Workshop 2). The dates for the second meeting are 14/15th November 2014; to book your place please log on to the PCRS-UK website and visit <http://www.pcrs-uk.org/respiratory-leaders-events>.

At the first workshop in July we heard from experts about how to set up a project with real-world examples from people like you who have done it. The delegates worked on creating one of our four example projects in a team with fellow delegates supported by facili-

tators and experts. In our second workshop we will be exploring the successful implementation of projects. So, whether your next step is organising an educational event or creating a financial case for a service redesign project, the Respiratory Leaders team and faculty will give you the confidence to scope your project, find an agreed aim and develop your strategy. We also look forward to everyone sharing ideas and plans so we can signpost delegates to appropriate resources to make it work.

After the event, our past delegates have kept in touch and used the faculty and other delegates to get continued support. We also offer an online 'ask the expert' facility where you can pose a question about service delivery to our expert panel of clinicians who will give you advice on a possible solution or advice on where to find out more to help you.

Since 2007 we have held a mentorship programme once a year for rising stars at a national or international conference. Many of today's respiratory leaders within CCGs, Health Boards and at regional level have come through this programme and can now support you to do the same.

We look forward to meeting you whatever your background and whatever your role in influencing improvement in primary care.

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## Set up (or join) a local respiratory group and make a real difference in respiratory care in your area



**Sara Askew**, *PCRS-UK Development Director*,  
**Carol Stonham**, *PCRS-UK Nurse Lead*

As a practice nurse with responsibility for improving respiratory care for patients can be a little daunting, especially when you're juggling workloads and trying to keep up to speed with the latest developments.

A local group is the ideal way to bring practice nurses (and other respiratory clinicians in your area) together. It provides a forum to help you and your colleagues develop your clinical skills and knowl-

edge, share best practice with peers, and benefit from a local network of support.

Coordinating a group or network takes time, but it is also very rewarding and, if you share responsibility with colleagues, it can be good fun as well as a great experience. It will raise your own profile locally and help you to make links with other healthcare professionals who might



otherwise continue to function in their own boxes without any interaction. Setting up and running a local group is also a real career development opportunity for you. Read on to hear the enthusiastic story from Melissa and Sarah on setting up their respiratory network in Leeds and learn how easy and inspiring the experience was!

*"After attending the PCRS-UK Respiratory Leaders Workshop in June 2013, we felt inspired and decided to set up a respiratory network in Leeds for practice nurses. At the time there was not a formal network for sharing ideas, best practice and support. Practice nursing can be quite an isolated role, and we felt this was needed. We had previously researched the quality of respiratory care in Leeds using the Atlas of Variation (<http://www.rightcare.nhs.uk/index.php/atlas/respiratorydisease/>) and identified the need for nurse education in order to reduce variation and improve quality of care for respiratory patients.*



*The primary aim of the Leeds Respiratory Network is to improve quality of care and reduce variation in respiratory care across Leeds.*

*Setting up the network was not too difficult; PCRS-UK offered lots of help, advice, support and encouragement. The practice nurses informed us they really appreciate the network as it is easy to keep practice up to date and is also a chance to meet and exchange ideas with other nurses. Setting up the network has opened up a wealth of opportunities for us personally and we would recommend nurses in other areas to take the lead and set up a local network without waiting to be asked.*

*We aim to hold four meetings a year, where guest speakers are invited to pass on their knowledge and skills to practice nurses in Leeds. We have developed a mailing list, twitter, Facebook community page and blog with regular updates of new guidance, evidence-based practices and resources to improve respiratory care. We are currently planning the first Leeds respiratory event with PCRS-UK which is due to take place in October 2014.*

*Since forming our network we have built relationships with other healthcare professionals including school nurses, public health, pharmacists, speech and language therapists, secondary care consultants and nurses, and also the community respiratory team. We hope to bridge the gap between primary and secondary care, thereby improving quality outcomes for patients. Our vision is to inspire others working in primary care to take the lead and invest in strategies to improve quality of care in their area."*

**Melissa and Sarah, Leeds Respiratory Network leads**

If you are interested in setting up a local respiratory group or network then PCRS-UK is here to support you. Our start-up pack of resources and tools contains lots of useful materials (many of which are just as useful for running your 10th meeting as your first) and provides template examples of event schedules, invitations, costing grids, feedback forms and much more.

Affiliate your group to PCRS-UK. Affiliation is free and offers enhanced credibility to the group. We allocate free membership to leads of PCRS-UK affiliated groups and provide access to a wealth of resources to help you in running the group as well as some administrative support. We provide a map of PCRS-UK affiliated groups on the website helping to promote them and we are delighted we have 52 groups listed, but hope we can grow even more! Check out the locality of the groups at <https://www.pcrs-uk.org/civicrm/google-mapping?reset=1>

We offer a free annual meeting for the leaders of local groups to help make all your meetings a success, and our next exciting group leaders meeting is Thursday 25 September 2014 (prior to the PCRS-UK annual conference). Agenda and details will follow very shortly, so watch the website for details. Click here to read feedback about our fantastic event in 2013 <http://www.pcrs-uk.org/nurse-events>

# PCRS-UK Quality Improvement Programmes: Equipping you to deliver excellence locally

## NEW ... PCRS-UK Practice Improvement Worksheets

Iain Small, Morag Reilly

For many years there have been respiratory guidelines and strategies, standards and frameworks, all aimed at improving clinical practice across the whole patient pathway and across the whole NHS. These are laudable, have been written using the best minds and the best criteria available, and set out clearly what our patients need in order to ensure that they have the best care, most effective symptom control, and most optimistic long-term future possible.<sup>1,2,3,4,5</sup>

And yet, in recent times there have been a series of publications and reports highlighting what many describe as sub-optimal care for patients across both asthma and COPD in the UK.<sup>6,7,8</sup>

Bridging the gap between our knowledge of what works and our ability to put it into clinical practice is a challenge. Busy clinicians don't always know what is in the relevant guideline,<sup>9</sup> and Quality Outcome Framework targets<sup>10</sup> may not reflect the most effective clinical interventions that come from the core documents. Competing clinical and managerial commitments in an ever more demanding environment mean that we need to have simple tools at our disposal that we can use effectively to address our most pressing problems.

To this end (and to support grass roots general practitioners, practice nurses and practice managers), the PCRS-UK has developed a series of Practice Improvement Tools. These simply written tools highlight specific problem areas in practice (see Box).

They provide simple step-by-step advice on how to address each problem, implement better practice, and measure success.

In NHS Grampian we have been closely involved in the development of the PCRS UK Practice Improvement Tools, having identified through our Managed Clinical Network a list of clinical priorities broadly matching the tools we have now developed.

- A simple audit of 30 patients admitted to secondary care with exacerbations of COPD highlighted the following common themes that we believed were important factors in the breakdown of post-discharge care and consequent re-admission to

**PCRS-UK Practice Improvement Worksheets available:** see <http://www.pcrs-uk.org/resource-types-improvement-tools> (make sure you are logged in first as these are member-only access)

- Identifying undiagnosed COPD
- Accurate diagnosis of COPD
- Identifying high impact COPD
- Stepping down triple therapy in COPD
- Post-acute COPD care bundle
- Assessing patients with advanced COPD
- Management of advanced COPD
- Diagnosis of asthma in children
- Reviewing high dose ICS in asthma
- Post-acute care bundle in asthma

hospital. The themes were identified by reviewing the patients' primary care records and assessing the COPD care received during the preceding 12 months. We found that:

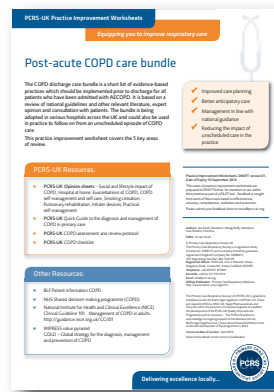
- 60% (18/30) had not been to pulmonary rehabilitation classes
- 90% (27/30) had no record of a self-management plan
- 63% (19/30) had at least one previous admission for COPD
- 27% of the 19 patients with a previous admission had no follow-up appointment post-discharge
- None of the 30 patients had any record of an objective assessment of COPD control (e.g. COPD assessment test (CAT) score)

In the community healthcare partnership with the highest COPD admission and re-admission profile, we have developed a 'Post Acute Discharge Review' employing the practice improvement worksheet post-acute COPD care bundle (http://www.pcrs-uk.org/system/files/Resources/Improvement-tools/PostacuteCOPDcarebundle\_Final.pdf) as illustrated. This pilot will test three important issues:

- Do the Improvement Tools work?
- Can they be embedded into routine clinical practice?
- Does the evidence from a pilot improvement site encourage broader uptake of the toolkit?

We hope to be able to report back to this journal in due course with the results of this implementation project.

If you would like to be involved in reviewing these new tools, log on to the PCRS-UK website to access these member-only tools at <http://www.pcrs-uk.org/resource-types-improvement-tools> (make sure you are logged in first as these are member-only access). You



can vote on its usefulness and tell us what you think of the tools by emailing us at [tricia@pcrs-uk.org](mailto:tricia@pcrs-uk.org). Don't forget to tell us about any other improvement worksheets you think would be valuable to you in your practice.

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**NEW... Effecting Quality in Practice (EQUIP)**


**Anne Smith, CE, PCRS-UK**  
**Tricia Bryant, PCRS-UK Operations Director and Project Lead, EQUIP**

Respiratory conditions such as asthma and COPD are common and have a significant impact on patients, their families and the local health economy. Yet management of these conditions is amenable to improvement that can lead to reductions in:

- Mortality
- Hospital admissions and unscheduled care activity
- Inappropriate drug prescribing

We also know that there is substantial variation across clinical communities in these variables and, for many practices, there is scope for improvement. However, the increasing demands on primary care make it increasingly difficult to find time to dedicate to devising and implementing programmes of improvement.

A group of PCRS-UK leading members – Iain Small, Iain Small, Respiratory Lead, NHS Grampian; Stephen Gaduzo, GPwSI, Stockport; Dr Noel Baxter, Respiratory Champion NHS Southwark; Ms June



**Effecting Quality in Practice**

A simple, modular tool to help practices, Clinical Commissioning Groups, Health Boards and other primary care-based groups deliver high value, patient-centred, respiratory care

Equipping you to:

- Tackle smoking cessation
- Achieve early and accurate diagnosis
- Reduce inappropriate pharmacotherapy prescribing
- Reduce hospital admissions

Roberts, Respiratory Clinical Lead Advancing Quality Alliance – have therefore harnessed their substantial expertise to produce the EQUIP programme, offering commissioners and clinicians practical tools and know-how to improve local outcomes.

**EQUIP** is a simple modular tool for practices, Clinical Commissioning Groups, Health Boards and other groups working in primary care respiratory medicine. It provides a structured, systematic way of reviewing the respiratory care being delivered and identifies ways in which the standards of care can be optimised within a practice or across multiple practices in a given locality.

The five modules (see box) take the interventions most likely to lead to improvement based on the National Institute for Health and Care Excellence (NICE), Asthma and COPD Quality Standards, the Department of Health Outcomes Strategy for COPD and Asthma, the IMPRESS guide to the relative value of COPD interventions, the BTS/SIGN guideline for the management of asthma and Seven Steps to High Quality COPD Care/DREAM. Each module is a stand-alone tool and participants can select those most appropriate to their needs.

### Modules Available

- Prevention and treatment
- Prevalence, early and accurate diagnosis
- Structured review and optimal care
- Admissions and unscheduled care
- End of life care

Each module identifies the interventions most likely to lead to improvement and provides suggestions on and links to:

- **Data sources** - to help you to understand how the data for your practice/group of practices compare with national data
- **Audit and search tools** - with suggested search criteria to help practices identify key groups of high-risk/high-cost patients
- **PCRS-UK resources** - including our new concise easy-to-follow practice improvement worksheets (see page 24), quick guides, opinion sheets, nurse protocols and other tools to support the practice team
- **Other evidence-based guidance** – other resources from appropriate credible organisations

“ The report of the national review of asthma deaths (NRAD 2014) spurred me and my commissioning colleagues on to ensure that the critical components of good asthma care happen every time for every patient. For example, in the households of children who died there was a 36% prevalence of smoking. One of the EQUIP modules can help practices to identify both smoking prevalence in asthma registers and whether evidence based treatment has been provided. The links from EQUIP to PCRS-UK resources will help our GPs and practice nurses to feel confident in diagnosing asthma and providing a structured review. There is also an opportunity to do an asthma audit and see how our practices compare with others across the UK. ”

Noel Baxter, London



## PCRS-UK Quality Award – Get recognised for the difference you make in respiratory care

The Primary Care Respiratory Society UK Quality Award, developed in conjunction with the British Thoracic Society, Royal College of General Practitioners, Association of Respiratory Nurse Specialists, Asthma UK, British Lung Foundation, Education for Health and Respiratory Education UK, sets out the standards that best define high quality respiratory care in primary care, providing:

- Recognition of practices providing a high standard of respiratory care – serving as a quality assurance mark not only for patients, but also commissioning groups and the wider NHS.
- A developmental framework that can be used at practice, locality and national level to promote, support and reward quality respiratory care in the primary care setting.

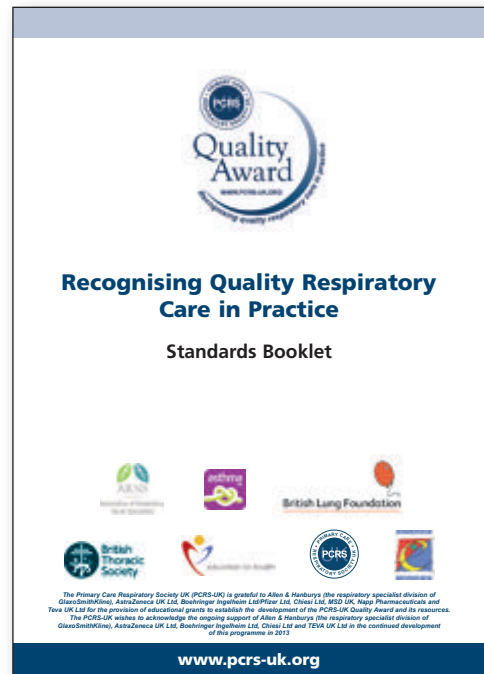
## NEW improved Award, Modular Format

There are nine modules and associated standards covering clinical, organisational and practice team topics. Each module comprises specific standards which practices applying for the award will be required to demonstrate that they have achieved using well recognised forms of analysis including audit, case studies, significant event analyses, protocols, and surveys.

The award offers practices a valuable developmental experience, whilst being relatively straightforward to complete. Practices can elect to undertake single modules as part of a learning framework, or undertake the full Award.

PCRS-UK can support you throughout the Award process. If you would like to talk to someone about participating in the Award or speak to someone who has already participated in the Award, contact us at [tricia@pcrs-uk.org](mailto:tricia@pcrs-uk.org) or telephone Tricia direct at 01675 477603.

Visit our website for more information and to view the standards <http://www.pcrs-uk.org/quality-award-standards> and related evidence required to achieve the Award. Visit our Getting Started pages <http://www.pcrs-uk.org/getting-started-you-apply> to help you get started towards achieving the Award.



## SPECIAL OFFER – FREE Participation in the Award for practices applying in 2014

### Duration of Award now extended to five years



**PCRS-UK Respiratory Quality Award**

The PCRS-UK Respiratory Quality Award developed in conjunction with the British Thoracic Society, Royal College of General Practitioners, Association of Respiratory Nurse Specialists, Asthma UK, British Lung Foundation, Education for Health and Respiratory Education UK, sets out the standards that define high quality patient centred respiratory care and is recognition that this practice provides a high standard of care for people with respiratory disease.

**The Primary Care Respiratory Society UK certifies that:**

*Your Practice Name*  
could go in here

has satisfactorily completed and submitted evidence to achieve the required standards of the PCRS-UK Respiratory Quality Award

Valid From:  Date

Valid to:  Date

Signed:   
Name, Lead Assessor









### Reaping the benefits from the PCRS-UK Quality Award

Collating the evidence you need to demonstrate the quality of care you are providing and apply for the Quality Award is a lot of work. Here are some comments from three individuals who were involved in working towards the Quality Award, giving a flavour of how the Award has helped and supported them in their practice in addition to successfully achieving the Award as a practice team.

The PCRS-UK Quality Award has allowed us to understand better the impact of, and the need for us to plan and co-ordinate our health promotion services, particularly around smoking. The fact that we have achieved the Award has been highlighted as an example of high quality asthma care by NHS Grampian in their response to a parliamentary question, which was picked up by the local press.

We have a great nursing team in the practice, but doing the PCRS-UK Award allowed them to reflect on and seek to develop the skills they needed in order to fill some identified gaps.

**Iain Small, Peterhead Health Centre  
Quality Award Participant 2011**

We started from the premise that we are doing a good job and agreed that we would like to see if that is the case, so demonstrating this was a core objective. This helped to get the whole practice team on board. We shared the work in bite-sized chunks, looking at who was best suited to different tasks, then we set time frames and reviewed regularly, which really helped us to stay on track.

We had a file on the shared drive with sub-folders: one for evidence in progress (i.e. unfinished) and one for evidence for the submission (where completed documents were put). Being systematic with this, using the evidence number as the title of the evidence, really helped. Using the shared drive meant that everyone who was contributing could find the information in one place.

**Deirdre Siddaway, Chesterfield Drive Practice, Ipswich  
Quality Award Participant 2013**

Several changes to processes of care have come about as a result of undertaking the Award, and these will be sustained. These include a new system for monitoring and following up all patients with COPD or asthma who are experiencing exacerbations of symptoms, and changes have been implemented to practice templates and documents that allow much easier construction of self-management plans.

**Anne Rodman, Rushall Medical Centre, Walsall  
Quality Award participant 2013**

# Open for submissions

The only fully indexed scientific journal devoted to the management of respiratory diseases in primary care



*npj Primary Care Respiratory Medicine* is an online-only open access journal published in partnership with the Primary Care Respiratory Society UK and the International Primary Care Respiratory Group.

Formerly published as the Primary Care Respiratory Journal (PCRJ), *npj Primary Care Respiratory Medicine* builds upon its tradition of publishing internationally-relevant open research that is essential to the future of primary care management of respiratory and respiratory-related allergic diseases.

Papers published by the journal represent important advances of significance to specialists within the fields of primary care and respiratory medicine.



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**CASE REPORT**    **OPEN**

# The challenge of objective confirmation of asthma diagnosis in primary care

Jatin Kaicker<sup>1</sup>, Wilfred Dang<sup>2</sup> and Anthony D'Urzo<sup>3,4</sup>

Asthma represents one of the most common chronic conditions encountered in primary care and diagnosis should be confirmed objectively with the demonstration of variable airflow obstruction. As many asthmatics have normal lung function at the time of clinical presentation, objective confirmation of airflow limitation may be challenging. Fluctuations in airflow obstruction can be documented with simple office spirometry after bronchodilator challenge, home monitoring of peak expiratory flow and bronchoconstriction induced by spasmogens such as methacholine. We present a case highlighting the challenge of objective confirmation of asthma diagnosis in primary care and provide a critical review of the diagnostic approaches highlighted above. Our aim is to provide a pragmatic interpretation of the available literature with a view to assisting clinicians in selecting the diagnostic test best suited for individualised patient encounters.

*npj Primary Care Respiratory Medicine* (2014) **24**, 14032; doi:10.1038/npjpcrm.2014.32; published online 24 July 2014

**CASE PRESENTATION**

A 48-year-old woman with no smoking history reported cough and feeling short of breath with exertion beginning several months before her clinic visit. It was not clear whether she experienced any episodes of wheezing or chest tightness in association with her shortness of breath. She also reported longstanding nasal congestion and throat irritation, which are symptoms consistent with postnasal drip syndrome. She did not complain of chest pain or respiratory symptoms associated with nocturnal or early-morning awakening.<sup>1</sup>

Her past medical history included eczema and a single episode of generalised hives. She reported sensitivities to trimethoprim and sulfamethoxazole as well as to metronidazole. Skin prick testing revealed positive responses to house dust mites. There was no family history of atopy or asthma. She did not report a history of cardiovascular illness. On physical examination, the blood pressure was 130/90 bilaterally, heart rate was 76 beats/min and regular, with a respiratory rate of 10 breaths/min. Her body mass index was 32 kg/m<sup>2</sup>. Air entry was equal bilaterally with no audible wheeze. There was mild nasal mucosal oedema and erythema without evidence of nasal polyps. Simple spirometry was carried out in the clinic for further assessment according to the American Thoracic Society Criteria.<sup>2</sup> A chest X-ray and 12-lead electrocardiogram obtained at the initial visit were both normal.

**INTRODUCTION**

Asthma is a complex disease associated with airway inflammation, hyper-responsiveness and variable airflow obstruction that may not all co-exist in many patients.<sup>1</sup> The criteria for spirometric diagnosis of asthma include an improvement in forced expiratory volume in 1 s (FEV<sub>1</sub>) of 12% and 200 ml after bronchodilator challenge.<sup>1</sup> This latter approach is often recommended as a first-line strategy for asthma diagnosis in the asthma guidelines.<sup>1</sup>

Simple spirometry can be carried out in the physician's office in a timely manner, and it provides useful information about the relationship between flow and volume. There are few clinically relevant risks associated with performing simple spirometry tests. However, the test's accuracy and reproducibility depends on maximal effort by the patient. The assessor must have the expertise to coach the patient, address language barriers and recognise unacceptable efforts, as poorly performed manoeuvres can mimic various disease patterns.<sup>3,4</sup> Measurement of peak expiratory flow rate (PEFR) is simple, convenient and can be done either in the clinic or in the home settings.<sup>1</sup> PEFR variability has been linked to airway hyper-reactivity and is recognised as a useful diagnostic aid that is well suited for adoption in primary care.<sup>1</sup>

More sophisticated testing such as methacholine challenge is recommended among patients who present with clinical features compatible with asthma but normal spirometric findings on initial testing. Methacholine challenge testing (MCT) includes inhalation of methacholine, a substance that is intended to induce bronchoconstriction in susceptible airways and may be associated with some risks. To our knowledge, there have been no reported deaths from MCT.<sup>5</sup> Some reports indicate that MCT is quite safe, even in patients with severe obstruction.<sup>6</sup> To date, the role of MCT as a first-line test for asthma diagnosis in the primary care setting has not been clearly delineated and has yet to be recommended by any agency or guideline outside of a specialty care facility.

The importance of objective confirmation of asthma diagnosis in the community setting has been discussed by Aaron *et al.*<sup>7</sup> They describe that about one-third of obese and non-obese individuals with physician-diagnosed asthma did not have asthma when objectively assessed. These findings raise awareness of the importance of objective confirmation of asthma diagnosis, and have stimulated considerable debate around which test to consider first by primary care physicians in the office setting.<sup>8,9</sup>

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**Table 1.** Initial spirometry assessment: spirometry performed during the initial clinic visit

Spirometry indices	PRE		POST		% Change
	Best	% Pred	Best	% Pred	
FVC	3.8	98	3.82	99	1
FEV <sub>1</sub>	2.85	91	2.96	95	4
FEV <sub>1</sub> /FVC	0.75		0.77		

Abbreviations: FEV<sub>1</sub>, forced expiratory volume in 1 s; FVC, forced vital capacity; % Pred, % predicted.

**Table 2.** Follow-up spirometry assessment

Spirometry indices	Pre		Post		% Change
	Best	% Pred	Best	% Pred	
FVC	4.04	105	4.13	107	2
FEV <sub>1</sub>	3.02	97	3.00	96	0
FEV <sub>1</sub> /FVC	0.75		0.73		

Spirometry performed six months after the initial clinic visit.  
Abbreviations: FEV<sub>1</sub>, forced expiratory volume in 1 s; FVC, forced vital capacity; % Pred, % predicted.

### CASE UPDATE

Spirometry performed during the initial clinic visit revealed a pre-bronchodilator forced vital capacity (FVC) of 3.80 l (98% predicted), FEV<sub>1</sub> of 2.85 l (91% predicted) and FEV<sub>1</sub>/FVC ratio of 0.75. The results are shown in Table 1. After bronchodilator challenge with salbutamol, the FVC was 3.82 l (99% predicted) and FEV<sub>1</sub> was 2.96 l (95% predicted), with an improvement of 4% and 110 ml from baseline. The FEV<sub>1</sub>/FVC ratio was 0.77 (Table 1). After discussion about the possible causes of her symptoms, including asthma, a management plan including watchful waiting of her mild symptoms was decided upon, including repeat spirometry during a follow-up visit in 1 month's time or sooner to evaluate interval change in clinical status.

The patient did not return until 6 months after the initial clinic visit. Spirometry revealed a pre-bronchodilator FVC of 4.13 l (105% predicted), FEV<sub>1</sub> of 3.02 l (97% predicted) and FEV<sub>1</sub>/FVC ratio of 0.75 (Table 2). After bronchodilator challenge with salbutamol, the FVC was 4.13 l (107% predicted), FEV<sub>1</sub> was 3.00 l (95% predicted); with an improvement of 0% and reduction of 20 ml from baseline), and the FEV<sub>1</sub>/FVC ratio was 0.73 (Table 2). Since her previous clinic visit, she described her symptoms as somewhat worse with increased cough, mucus production and shortness of breath with activity. Salbutamol was prescribed for as-needed use and an MCT was ordered. The results of baseline spirometry conducted ~2 months later and just before MCT and after reversal of methacholine-induced bronchoconstriction are shown in Table 3. Although baseline spirometry was normal and comparable to the previous measurements, mentioned above, the provocative concentration of methacholine resulting in a 20% reduction in FEV<sub>1</sub> (PC<sub>20</sub>) from baseline was 3.37 mg/ml, a finding that would support a positive hyper-bronchial test. Treatment with regular inhaled corticosteroid and as-needed salbutamol resulted in a marked improvement in symptoms.

### CLINICAL CONSIDERATIONS

In this case, several attempts with simple spirometry failed to identify FEV<sub>1</sub> changes that would meet the bronchodilator reversibility criteria for asthma diagnosis outlined in national and international guidelines.<sup>1,10</sup> Lusardi et al.<sup>11</sup> reveal that most patients in primary care have mild asthma and well-preserved lung function and that airflow obstruction—defined as a reduction in the ratio of FEV<sub>1</sub>/FVC < 0.70—was observed in only 21% of patients diagnosed with asthma. They were not able to demonstrate a significant advantage of office spirometry in improving the diagnosis of asthma and COPD in standard general practice.<sup>11</sup>

Goldstein et al.<sup>12</sup> were among the first to report that variability in PEFR and postbronchodilator FEV<sub>1</sub> responses are poor substitutes for methacholine inhalation challenge in the assessment of patients with suspected asthma with normal findings on lung examination, chest radiography and spirometry. The reports

**Table 3.** Methacholine challenge test

Methacholine concentration (mg/ml)	FVC (l)	FVC (%Ctrl)	FEV <sub>1</sub> (l)	FEV <sub>1</sub> (%Ctrl)
Baseline	3.85	96	2.98	97
Control (Ctrl)	4.01	100	3.06	100
0.125	3.23	81	3.04	99
0.500	3.10	77	2.91	95
2.000	3.25	81	2.77	91
4.000	3.17	79	2.3	75
Reversal	3.68	92	2.8	92

Baseline spirometry prior to methacholine challenge test and after reversal of methacholine-induced bronchoconstriction.  
PC<sub>20</sub> (FEV<sub>1</sub>) = 3.37 mg/ml, where PC<sub>20</sub> is the provocative concentration of methacholine resulting in a 20% reduction in FEV<sub>1</sub> from baseline.  
Abbreviations: FEV<sub>1</sub>, forced expiratory volume in 1 s (predicted value = 3.11 l); FVC, forced vital capacity (predicted value = 3.85 l); % Pred, % predicted.

of Hunter et al.<sup>13</sup> indicate that methacholine responsiveness is more than twice as sensitive as bronchodilator reversibility for FEV<sub>1</sub> and variability in PEFR as a marker of mild asthma. Furthermore, Schneider et al.<sup>14</sup> highlight that the sensitivity for diagnosing airway obstruction in asthma with simple spirometry was only 29%. The data described by Ulrik et al.<sup>15</sup> suggest that airway responsiveness to histamine, diurnal peak-flow variability and bronchodilator reversibility cannot be used interchangeably as objective markers of asthma in epidemiologic studies. They suggest on the basis of their findings that airway hyper-responsiveness to a nonspecific bronchoconstrictor is recommended as the objective marker of asthma-related airway lability. Yurdakul et al.<sup>16</sup> also describe a much higher sensitivity for MCT compared with FEV<sub>1</sub> reversibility and PEFR variability for asthma diagnosis among patients attending an outpatient asthma clinic. Furthermore, the data described by Aaron et al.<sup>7</sup> suggest that asthma diagnosis could be confirmed in only 16% of patients by means of postbronchodilator spirometry at the time of testing (at least 15% and at least 200 ml) and in 72% of patients by means of bronchial challenge testing with methacholine. Finally, Luks et al.<sup>17</sup> suggest that only 10.8% of patients were diagnosed with asthma using simple pre- and postbronchodilator spirometry at the time of testing, while MCT resulted in a confirmation rate of 61.7% and an exclusion rate of 27.3% among individuals whose lung function was reported to be in the normal range at clinical presentation. It is important to note that, among asthma patients identified in an administrative database with lower lung function compared with the studies cited above, Macy et al.<sup>18</sup> found that 62% of asthmatics were identified with FEV<sub>1</sub> reversibility.

These findings<sup>18</sup> may suggest that baseline lung function and asthma control in general may influence bronchodilator responsiveness.

The findings highlighted above underscore the lower sensitivity of bronchodilator reversibility and PEFR variability as confirmatory tests compared with MCT for asthma diagnosis in primary care among patients with mild disease. Repeated testing with simple spirometry at different visits is advised in order to obtain objective confirmation of asthma diagnosis.<sup>19</sup> To date, there are no studies describing how many simple spirometric tests or trials of PEFR monitoring would be required to demonstrate bronchodilator responsiveness and airflow variability in a given patient in whom asthma is suspected. Guidelines do not clearly highlight how bronchodilator reversibility and PEFR variability testing might be implemented in primary care, including how patients with normal lung function on repeat testing should be managed during the interval between clinical suspicion of asthma and objective confirmation, particularly as treatment might reduce the odds of detecting meaningful improvements in FEV<sub>1</sub> after bronchodilator challenge or documentation of PEFR variability. Although MCT is safe and perhaps the most sensitive test for diagnosis of mild asthma, its role as a first-line test in primary care remains to be determined and it is not without deficiencies as a confirmatory test. For example, a provocative concentration of methacholine causing a 20% fall in FEV<sub>1</sub> of < 8 mg/ml may lack specificity and sensitivity.<sup>20</sup> False-positive results are seen in patients with other diseases, including COPD, allergic rhinitis and sarcoidosis. Because MCT has a high negative predictive value, it is more useful in ruling out asthma (if the result is negative) than in ruling it in (if the result is positive). A negative methacholine challenge test nearly always rules out asthma; however, a positive test result needs to be interpreted cautiously if the patient is not experiencing symptoms.<sup>21–23</sup>

## SUMMARY AND CONCLUSIONS

The case presented here and the series of studies highlighted above underscore the challenge of asthma diagnosis in primary care where there is a high probability of normal lung function at the time of testing in many patients. This clinical scenario calls for more studies dealing with the evaluation of asthma diagnostic and management strategies that are pragmatic, sensitive and cost-effective. Understanding the benefits and limitations of reversibility testing, PEFR variability measurements and MCT may help primary care physicians to better tailor their diagnostic approach among individuals with suspected asthma.

## CONTRIBUTIONS

All authors contributed to the development of this article.

## COMPETING INTERESTS

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