



Winter 2018
Issue 16

Primary Care Respiratory Update



Edition Highlights

- Focus on respiratory disease in NHS England long term plan
- Respiratory virtual clinics
- Spirometry certification in Wales
- Conference feedback and abstracts



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References

1. Fostair[®] NEXThaler 100/6 Summary of Product Characteristics. Chiesi Limited. 2. MIMS Online. 2018. Available at www.mims.co.uk Accessed October 2018.

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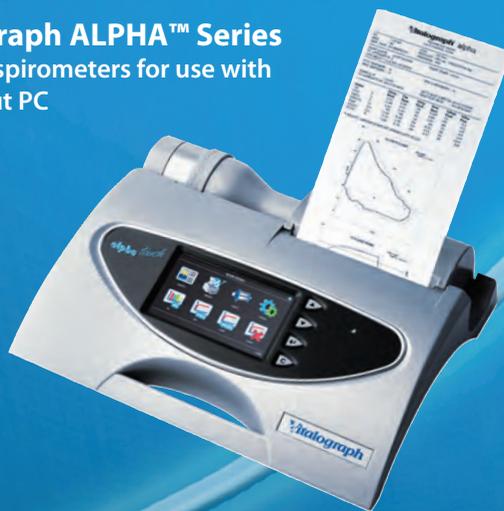
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Primary Care Respiratory Update



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Ref:

1. MIMS. Accessed on 1st October 2018 at <https://www.mims.co.uk>
2. GOLD guidelines 2018. Accessed on 1st October 2018 at <http://goldcopd.org/>
3. SmPC NACSYS. Accessed at <http://mhra.gov.uk/spc-pil/>

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Editor's Round-Up

Dr Iain Small, *Editor Primary Care Respiratory Update*



Welcome to this issue of *Primary Care Respiratory Update*. In no way related to the return of *Dr Who*, this issue takes a look at the past, the present and the future. Rather like the TARDIS, there is a deceptively large amount of content in this issue, combining policy, educational and clinical care, looking at what works and why, and how we can be part of the new and exciting future for respiratory care.

To be more specific, I would draw your attention to the excellent interview with Professor Mike Morgan, the comprehensive coverage of this year's PCRS conference, and the thought-provoking work from Jorgen Vestbo and colleagues using virtual clinics to improve patient care.

As ever, I am grateful to our contributors and Editorial Board for keeping *PCRU* on track and relevant to those of us working face-to-face with patients.

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Chair's Perspective

Noel Baxter, *PCRS Executive Chair*



I was recently fortunate enough to be asked by the International Primary Care Respiratory Group (IPCRG) to join their President, Ioanna Tsigliani, a GP from Crete at the 3rd Chinese Association of Respiratory Disease in Primary Care in Hangzhou, China. This visit made me reflect on the past, present and future for health professionals working in and with General Practice and Community based care. Whilst the China society is on its 3rd meeting we are currently in our 31st year and there was much to share with them but also I realised there is still a lot to do and as colleagues in the NHS often comment, I also reflected on us “coming full circle to where we started!”

The journey towards too many experts is highlighted by Mike Morgan, National Clinical Director for Respiratory in England who says in this issue that ‘Patients want specialists, but the system needs generalists.’ I heard that in China the specialist pulmonologists were overwhelmed by people self-referring to the best experts and as a consequence the specialists were seeing too broad a range of conditions that left them working more like generalists but without the time or additional skills to truly carry out this role. One of these pulmonologists who interpreted for me in my session was surprised by how much a doctor in general practice will now do before passing to a pulmonologist in the UK and even more surprised when I said that the general practitioner making these diagnostic and therapeutic decisions could have a nursing or pharmacy background.

We should be pleased at the progress we have made in equalising the different health and lay roles in respiratory which will enable us to take more ownership in exploring comprehensively the symptoms people get of cough, breathlessness, recurrent wheeze and ‘chest infection’

whilst considering the wider issues affecting that patient's life.

Over the summer the PCRS trustees, executive, lay reference group and committee members came together to consider our strategy for the next 3 years. We concluded that increasingly we must start with the symptoms people experience and ensure they are considered in the whole. The concept of value-based care that is something now well established in PCRS was further underlined and we will be working to ensure that we consider waste, green issues and cost effectiveness in the work we do over the next few years. You will also hope that you will see an increasingly ‘digital first’ approach. We will bring to you the insight and knowledge of our experts and members in easily accessible bit sized portions that reflects the way that we now learn and get inspired.

Those of you who attended conference this year will have seen the beginnings of our digital development with a new brand and look and also a very successful conference app. For me one of the highlights was the quality of abstracts we received. The winning Best original research abstract from Professor Nick Francis of Cardiff University will have a significant impact on clinical practice with regard to desktop testing by HCPs in general practice and community and on improving our antibiotic prescribing so do look out for this study due to be published soon.

We also shared with our 470 delegates the UK version of the internationally developed Asthma Right Care (ARC) slide rule (<https://bit.ly/2KJkvxK>). This is one of the tools that will help us as PCRS get out a new way of messaging to our colleagues that over reliance on SABA is something that still needs to be tackled.

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This was the last conference for me as Chair though I will certainly be there next year to see Carol Stonham welcome our respiratory interested audience from a broad base of disciplines. Carol was elected to be our new Chair starting in September 2019 and will be both the first nurse and first woman in this role.

It is a good time for respiratory as we have been saying over the last year and I look forward to the detail of the NHSE Long Term Plan being teased out from its launch

in December to the beginnings of implementation in the new financial year. I look forward to working with our respiratory leadership delegates, affiliated groups and members in 2019 to start ensuring our colleagues in the developing integrated services are implementing those new respiratory must dos'. In Wales we will see another primary care audit being reported on with our new Vice Chair Katherine Hickman taking the lead on this for the RCP, this time telling us about adult and child asthma care as well as learning

about how things are improving for people with COPD. I am still working hard with HQIP and the RCP audit team to bring the audit to England and Scotland, so watch this space!

I hope you have a restful holiday season and that you keep in contact through our PCRS networks during the winter pressures so that you can stay resilient until the next time we meet in person again.

A focus on respiratory disease for England

Bronwen Thompson discusses the respiratory long-term plan for England with **Professor Mike Morgan**, *National Clinical Director for Respiratory Disease at NHS England*



Professor Morgan has a smile on his face. During 5 years as National Clinical Director for Respiratory Disease at NHS England (NHSE), he has seen the introduction of a range of initiatives designed to improve respiratory care. The National COPD Audit has been established and asthma has been added this year. NHS RightCare has produced CCG level data on respiratory disease outcomes and expenditure and has developed the ‘COPD pathway’, showing what evidence-based care looks like right across the system from prevention to end of life. A collaborative tuberculosis strategy bridges public health and the NHS to address growing levels of tuberculosis. Significant improvements in rationalising specialised services for respiratory disease have also come to fruition. Then there have been breathlessness and cough campaigns.

“ There are pressures around winter admissions and the penny has finally dropped that respiratory is the major cause of the rise in winter admissions – they effectively double in winter. ”

However, the profile of respiratory disease has just taken a huge leap forward. Professor Morgan is smiling because respiratory disease has just been included in the list of priority disease areas for the NHS long-term plan in England. The Five Year Forward View was published in 2014, and is the plan that has been guiding changes in the NHS for the last 4 years. This set in motion a series of initiatives focused on exploring new ways of working in order that the NHS is able to meet the challenges of the 21st century. In primary care we have seen a move towards delivering care at scale, and practices collaborating in federations and clusters. We have also seen a greater em-

phasis on integration of planning and service provision across traditional boundaries in health and social care.

“ Respiratory disease stands out as an area where inequality is most overt. You are five times more likely to die from respiratory disease if you are in an impoverished area compared with being in a less impoverished area. ”

So now is the time for a new longer-term plan to build on the Five Year Forward View. And now is the time for a focus on improving respiratory disease outcomes across England. “Respiratory disease has been attracting attention both locally and nationally. At a local level, CCGs are seeing high admission rates for respiratory conditions and costly care, so it has become a significant priority. They are also recognising that respiratory problems are playing a significant part in winter pressures. Improving the care of people with respiratory disease could help to ease the burden on the health service in the times when it is under greatest pressure.”

Professor Morgan also points out that there are increasing concerns in NHSE about inequalities for people with respiratory disease. The gap in mortality rates between the least deprived and

“ Enabling primary care to do better is going to be a major theme because everyone is realising that the burden on primary care is intolerable at present and it is not able to deliver what we expect of it. ”

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most deprived has widened by 20% over the last 15 years. “The death rate for respiratory disease in the poorest decile has risen by 14%. And in the most affluent decile it has fallen by 5%, so you are five times more likely to die from respiratory disease if you are in an impoverished area compared to a less impoverished area.”

“ Let’s start pulmonary rehabilitation at the point of diagnosis, not leave it until later – why wait? Encourage a healthier lifestyle and being active right from the beginning. ”

International comparisons also show England in a poor light, with mortality rates from respiratory disease higher than many other countries in Western Europe. In 2010 the UK was ranked among the worst out of 27 member countries of the Organisation for Economic Co-operation and Development (OECD) on outcomes related to respiratory disease.

So a planning group with input from the respiratory community was convened under the chairmanship of NHSE National Medical Director Professor Stephen Powis to explore how a national plan could address some of the key areas for improvement in respiratory disease. The national plan expects to address issues at various stages of respiratory disease. The planning group have focused on several themes:

- Prevention – including flu immunisation, pollution, physical inactivity and tobacco dependency
- Early detection and accurate diagnosis – case finding, diagnostic hubs, early specialist involvement to support diagnosis
- Optimal treatment – including empowerment and education to self-manage, expansion of pulmonary rehabilitation, optimising medication (economic prescribing, better training and usage of inhalers, better use of pharmacists)
- Acute care – risk assessment of patients with pneumonia and other steps in line with the published Winter Pressures Guide.

Professor Morgan highlighted a key difference between primary and secondary care – that primary care considers the population they are responsible for and takes a proactive approach towards identifying the more vulnerable and high risk. “There needs to be much more integrated thinking and integrated working. Specialist integrated care physicians can play a key role here, but in general we also need more vertical integration of services, and for the care provided to be stratified according to the needs of distinct groups of patients. Other specialties are good at this and have a tiered approach to care so that a patient has access to the level of care most appropriate for them.”

Professor Morgan also reflects on the conundrum of determining the kind of skills and approach that is needed to drive improvements in care. “Patients want specialists, but the system needs generalists. We need to think more about how patients present – with symptoms, not a diagnosis. So why don’t we have more breathlessness clinics run by generalists? Once there is a clear diagnosis, then they can be referred to appropriate specialists if required – but let’s put more effort into getting the diagnosis right in the first place.” Another reason that a more generalist approach will become increasingly appropriate is the rise in patients with multimorbidity and frailty which will accompany the increase in numbers of older people.

There are obvious challenges for commissioning too. “Currently commissioning for primary care services and secondary care fall to different individuals – in an ideal world we would just be operating in a single service, with commissioning across pathways of care. We need to build on the innovative approaches being trialled following the Five Year Forward View which cut through traditional boundaries and focus on the patient journey, not NHS structures.”

“ Admission rates for COPD and asthma in England are twice as high as they are in France – and it’s hard to know why that should be. ”

So what does all this mean for primary care? Most of the respiratory themes under discussion in the long-term plan fall squarely into the remit of primary care, and NHSE acknowledges that the majority of respiratory care takes place in primary care, so this balance is entirely appropriate. Recent guidelines have focused on the importance of improving diagnostic accuracy. Strengthening the assessment of competence to undertake and interpret spirometry, and putting the National Register for spirometry on a firmer footing is just one initiative that is already underway. So this long-term plan will build on some existing initiatives but also introduce new ones. The plan may include case finding in COPD and a more structured education programme for patients with respiratory disease, for example.

Strategies and plans don’t in themselves make any difference. They have to be implemented to make a difference. The long-term plan will facilitate change and provide a focus and a direction for respiratory disease. But, ultimately, patients will only notice a difference if the people they have contact with in the NHS are doing something differently. And this will rely on the engagement of the respiratory interested community. We need to be active champions for respiratory patients. Then not only will Professor Morgan have a smile on his face, but respiratory patients will too.



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Trelegy Ellipta FF/UMEC/VI 92/55/22 mcg is indicated for maintenance treatment in adult patients with moderate-to-severe COPD who are not adequately treated by a combination of an ICS and a LABA.¹

COPD, chronic obstructive pulmonary disease; FF, fluticasone furoate; ICS, inhaled corticosteroids; LABA, long-acting β_2 -agonist; LAMA, long-acting muscarinic antagonist; OD, once-daily; UMEC, umeclidinium, VI, vilanterol.

References: 1. Trelegy Ellipta SmPC. 2. Lipson DA *et al.* Am J Respir Crit Care Med 2017; 196:438-446. 3. Svendsen H *et al.* BMC Pulm Med 2013; 13:72-86. 4. van der Palen J *et al.* NPJ Prim Care Respir Med 2016; 26:16079.

Trelegy  Ellipta (fluticasone furoate/umeclidinium/vilanterol [as trifenate])

Prescribing information

Please consult the full Summary of Product Characteristics (SmPC) before prescribing. **Trelegy Ellipta (fluticasone furoate/umeclidinium/vilanterol [as trifenate]) inhalation powder.** Each single inhalation of fluticasone furoate (FF) 100 micrograms (mcg), umeclidinium (UMEC) 62.5 micrograms and vilanterol (VI) 25 mcg provides a delivered dose of 92 mcg FF, 55 mcg UMEC and 22 mcg VI. **Indications:** Maintenance treatment in adult patients with moderate to severe COPD who are not adequately treated by a combination of an inhaled corticosteroid (ICS) and a long-acting β_2 -

agonist (LABA). **Dosage and administration:** One inhalation once daily. **Contraindications:** Hypersensitivity to the active substances or to any of the excipients (lactose monohydrate & magnesium stearate). **Precautions:** Paradoxical bronchospasm, unstable or life-threatening cardiovascular disease or heart rhythm abnormalities, convulsive disorders or thyrotoxicosis, pulmonary tuberculosis or patients with chronic or untreated infections, narrow-angle glaucoma, urinary retention, hypokalaemia, patients predisposed to low levels of serum potassium, diabetes mellitus. In patients with moderate to severe hepatic impairment patients should be monitored for systemic corticosteroid-related adverse reactions. Eye symptoms such as blurred vision may be due to underlying serious conditions such as cataract, glaucoma or central serous chorioretinopathy (CSCR); consider referral to ophthalmologist. Increased incidence of pneumonia has been observed in patients with COPD receiving inhaled corticosteroids. Risk factors for pneumonia include: current smokers, older age, patients with a low body mass index and severe COPD. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take Trelegy. Acute symptoms: Not for acute symptoms, use short-acting inhaled bronchodilator. Warn patients to seek medical advice if short-acting inhaled bronchodilator use increases. Therapy should not be abruptly stopped without physician supervision due to risk of symptom recurrence. Systemic effects: Systemic effects of ICSs may occur, particularly at high doses for long periods, but much less likely than with oral corticosteroids. **Interactions with**

other medicinal products: Caution should be exercised during concurrent use of non-selective and selective beta-blockers and when co-administering with strong CYP3A4 inhibitors (e.g. ketoconazole, ritonavir, cobicistat-containing products), hypokalaemic treatments or non-potassium-sparing diuretics. Co-administration with other long-acting muscarinic antagonists or long acting β_2 -adrenergic agonists has not been studied and is not recommended. **Pregnancy and breast-feeding:** Experience limited. Balance risks against benefits. **Side effects:** Common ($\geq 1/100$ to $< 1/10$): pneumonia, upper respiratory tract infection, pharyngitis, rhinitis, influenza, nasopharyngitis, headache, cough, arthralgia, back pain. Other important side effects include: Uncommon ($\geq 1/1,000$ to $< 1/100$) supraventricular tachyarrhythmia, tachycardia, atrial fibrillation; Not known (cannot be estimated from the available data) vision blurred; See SmPC for other adverse reactions. **Legal category:** POM. **Presentation and Basic NHS cost:** Trelegy Ellipta 92/55/22 mcg - £44.50. 1 inhaler x 30 doses. **Marketing authorisation (MA) nos. 92/55/22 mcg 1x30 doses [EU/1/17/1236/02]; MA holder:** GSK Trading Services Ltd., Currabiny, Co. Cork Ireland. **Last date of revision:** November 2017. UK/TLY/0031/17. Trademarks are owned by or licensed to the GSK group of companies. 2017 GSK group of companies or its licensor Trelegy Ellipta was developed in collaboration with Innoviva Inc.

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Discover more at www.trelegy.co.uk

A full list of adverse reactions for Trelegy Ellipta can be found in the Summary of Product Characteristics.

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Multidisciplinary Respiratory Virtual Clinics

Fran Robinson interviews **Dr Noel Baxter, Dr Binita Kane, Dr Georges Ng Man Kwong and Dr Jørgen Vestbo**, to discuss their experience of setting up and running multidisciplinary respiratory virtual clinics



Multidisciplinary respiratory virtual clinics (RVCs) offer an innovative way of bringing together hospital lung specialists and primary care clinicians to improve the care of people with long-term conditions such as COPD.

RVCs involve discussions of case notes and treatment plans in general practice in sessions lasting 2–3 hours. Practices will have selected the patients they want to review prior to the RVC, prioritising cases where treatment can be optimised or those causing diagnostic difficulty.

Evaluations of RVCs for COPD show that a reduction in high-dose inhaled corticosteroid (ICS) prescribing can be achieved with patients being moved on to effective high value interventions such as pulmonary rehabilitation and smoking cessation. For example, two years ago Lambeth saved £200,000 in a year by reducing ICS in RVCs.

Primary care clinicians' confidence to manage respiratory conditions improves and they appreciate the networking opportunity and having a specialist visit the practice. The specialist hospital teams feel that the RVC makes good use of their time and that they gain a greater understanding of the challenges and culture of general practice. Even though patients are not present in the RVCs, they appreciate that a trusted opinion had been given on their case.

Dr Noel Baxter, *PCRS Executive Chair, GP and clinical commissioner*

Noel has been involved as a clinician and a commissioner in helping to set up RVCs in Southwark and encouraging his primary care colleagues to become involved in the process.

In Southwark the consultant physician, respiratory specialist pharmacist or respiratory specialist nurse or physiotherapist will go into practices and work with primary care clinicians according to their learning needs around asthma and COPD. Practices are offered two visits a year.

Each year the RVC model has had a slightly different focus, with themes ranging from COPD, asthma and diagnosing breathlessness to cardiorespiratory care, depending on which area the CCG is incentivising practices to improve.

Noel explains: "Virtual clinics can work in any way. But practices get more out of them if they fit round a quality improvement project. They can also work very effectively at GP federation level because these organisations have their own analysts and IT people and can get good baseline data. This enables them to analyse bigger populations while also providing a micro level of benefit within individual practices.

"RVCs improve communication pathways and relationships between primary and secondary care. So Dr Irem Patel, one of the earliest pioneers of RVCs who is one of our two integrated respiratory physicians, has visited every practice and everyone knows and trusts her and now feels able to pick up the phone to her with any respiratory queries.

"When you incentivise RVCs financially you get more engagement because practices will then prioritise what they are going to work on in a particular year.

"You still end up with practices that don't engage with the process because they haven't got the headspace to do it. Sometimes practices might feel that they have someone who is a respiratory expert and they don't need the extra help. But my experience is that practices benefit from the RVC because of the multidisciplinary team working together. This also raises respiratory medicine up the agenda of the practice. It also gives GPs an opportunity to see how their nurses and pharmacists are doing and whether they need more support in looking after respiratory patients.

"In Southwark in the last year we have explored the idea of introducing some cardiological expertise into RVCs because patients with COPD often have cardiac causes of breathlessness or heart



Learning points - Dr Noel Baxter

- Anyone interested in setting up RVCs should start by seeing how other people are doing it. This is also a good way to pick up connections with people who can support and help you. PCRS has set up a new network for integrated care physicians which could be a good place to start making contacts.
- Try to prevent your project getting stuck at CCG level. You need somebody on the commissioning side who can give it a push and explain why it's important so that the money can be found to get it started.
- Setting up an RVC is all about persistence and persuasion, building relationships, building bridges and developing a network.

failure. One of the trusts has been interested to develop a cardiorespiratory RVC to break down some internal hospital boundaries and to prevent patients bouncing between cardiac and respiratory specialties.

"Now that respiratory disease has been named as a key area in the 10-year plan for NHS England, this is a fantastic opportunity for those areas that don't have integrated respiratory services or RVCs to look at new ways of delivering the improved outcomes that will be expected of them."

Dr Binita Kane, Consultant Respiratory Physician, University Hospital of South Manchester and member of the PCRS Service Development Committee

Binita Kane became interested in RVCs when she was asked to develop an integrated respiratory care service.

She first spent some time shadowing Dr Irem Patel, Consultant Respiratory Physician Integrated Care Kings Health Partners/Lambeth and Southwark CCG, and is working alongside Jørgen Vestbo, Professor of Respiratory Medicine at the University of Manchester and an international expert on COPD to deliver the RVCs.

Binita started by engaging the lead CCG pharmacist because she says it was clear from the London experience that pharmacy engagement and the medicines optimisation team had helped to drive the RVC model.

They started with an unfunded pilot of 10 practices which was successful and resulted in a second fully commissioned pilot of 10 RVCs, which has now been completed.

Initial results show that on average 88% of patients discussed had changes recommended: 60% of patients were recommended to reduce their ICS and this included 48% of patients who were eligible to stop their ICS. Confidence scores of practice

staff in attendance in managing COPD doubled from an average of 4/10 to 8/10 and drug cost savings directly attributable to the RVCs was £14,423 based on changes that had been implemented at 6 weeks post RVC.

Additionally, comparison of prescribing habits between GP practices that had hosted a RVC versus those which had never hosted an RVC, showed an increase in prescription of LAMA/LABA drugs and triple therapy inhalers in keeping with the latest guidelines.

Binita says: "The benefits of the RVC have been huge. It has effectively paid for itself with cost savings from reducing prescribing of inappropriate medication. However it is so much more than that because what happens is the secondary care clinician goes into the practices, starts having a conversation about the patients which have been specifically targeted through case finding, but this soon becomes a free-flowing conversation and becomes an education session for the practice.

"The feedback has been absolutely phenomenal, the practices have absolutely loved the clinics. Some practices were doing the right thing and the mentorship has given them the reassurance they needed, in others it has been transformative for how they manage COPD."

Binita is now working with a body called Health Innovation Manchester, and a respiratory working group, in an ambitious programme to try and roll out RVCs to across 500 practices and 10 localities in the devolved Greater Manchester Health and Social Care Partnership, working with both industry and non-industry partners to drive implementation at pace and scale.

Learning points - Dr Binita Kane

- The hardest thing for me at the beginning from a practical point of view was arranging the actual clinics. This requires dedicated time and convincing both GP practices and consultants that this model of care is worth investing time, money and effort in.
- Ideally, you need a clinical champion from secondary care to help drive the process. However with the current workforce crisis it might not be practical to set this up as a consultant-led model. Think laterally about who could be trained up – a nurse consultant, an advanced nurse practitioner or a specialist pharmacist. The advantage of having a consultant leading the process is that they are trusted experts, which helps to build confidence in the primary care workforce.
- You could spread RVCs to asthma as they have done in London. The greater challenge with asthma is it's harder to advise from a distance because treatment in asthma is more individualised and dependent on detailed clinical history, but there is still a role to educate clinical teams about asthma management.

“Partnership working and devolution gives an incredibly unique opportunity for Greater Manchester to do it differently. We are all working together to improve population health and reduce variation across the system. It’s not without its challenges though, we have issues around the workforce and infrastructure needed to deliver such a programme,” she says.

Binita has also been working with Health Education England to develop a virtual learning hub to consolidate the learning from the RVCs and provide short videos of respiratory experts explaining key principles. It will also have a chat room facility so that all the practices can discuss the issues everybody else is having.

Dr Jørgen Vestbo, Professor of Respiratory Medicine, Manchester University NHS Foundation Trust

Jørgen did most of the 10 pilot RVCs described by Binita and has done a further 15 RVCs in Manchester. Jørgen has a COPD clinic at the Wythenshawe site and is otherwise involved in COPD research and leads the Respiratory Theme of the NIHR Manchester Biomedical Research Centre.

He says: “For me, the RVCs have first and foremost been an almost ideal way of having a dialogue between primary and secondary care. From the feedback we have had, this has worked well for the participating practices and I have certainly learned a lot.”

The RVCs Jørgen has been involved in have lasted two hours each and almost all of them have been with the same CCG pharmacist.

He says “It is quite amazing what you can get through in two hours! We always start with the search prepared by Katie and talk rational pharmacotherapy and stepping ICS down, but over the 2 hours we end up spending a lot of time discussing COPD in general. For me this is wonderful as we get to discuss smoking cessation and pulmonary rehabilitation/physical activity – my two favourites.”

Dr Georges Ng Man Kwong, Consultant Chest Physician, Pennine Acute Hospitals NHS Trust

Georges decided to pilot a RVC in 2013 when he took on the role of clinical lead for the Pennine Lung Service, an integrated respiratory service based in Oldham.

It took about two years to set up because the service wasn’t commissioned and everyone was working on it in their spare time. Eventually they set up an RVC pilot, based on the London model, in nine GP practices.

They spent up to three hours in the clinics with the GPs and/or the practice nurse, then measured the changes. They made recommendations to change treatment and modify approved treatment in about 60% of patients, reduce or stop ICS therapy in one in four patients and nearly a third of patients were identified as

Learning points - Dr Georges Ng Man Kwong

- Recognise the power of collaboration and breaking down the barriers between the different cultures of primary and secondary care. The shared learning is beneficial for both sides. As a secondary care consultant I’ve learnt a lot about the primary care challenges and perspectives and just how well GPs and practice nurses know their patients. For example, we can give people drugs and pulmonary rehabilitation until the cows come home, but this will be ineffective if the root cause of their problem is that they are lonely and anxious. In these situations we need to identify other services in the community that can help them. I now have a much more holistic view of patients.
- It is important to spread the word about RVCs – they reduce prescription costs, improve patient care and quality of life and reduce hospital admissions.
- RVCs should not be held in isolation. They should be part of a wider model of integrated respiratory care.

being suitable for pulmonary rehabilitation. A small number of patients were recommended for further investigation for other lung diseases such as bronchiectasis, and a few patients were taken off the register.

Georges is now working closely with Oldham CCG and an Oldham GP Cluster to further improve respiratory care. He says: “The idea is that the RVC will be one part of a respiratory model, not just for COPD but eventually for all lung disease. The virtual clinic is just one component for a transformational change of service within a GP cluster (one of five) in Oldham. Our aim is take a ‘deep-dive’ into understanding gaps in service and the needs of our patients. This will include risk stratifying patients within the cluster which will then form the basis of a RVC as well as establishing a local network for training and education which will lead to improved collaborative working and communication. We then hope to take our blueprint out to the rest of the locality. Going forward I very much hope the RVC model is an idea that will catch on.

“The challenge has been to engage busy GP practices. There is little published evidence on RVCs and the service we were setting up wasn’t commissioned. But the practices we did connect with gave some very positive feedback on the clinics. For the future I hope eventually we will be able to upskill our primary care colleagues so that they will be able to do the virtual clinics themselves.”

“On a personal level the RVCs have changed my attitude and mind-set. I now feel I’m serving the local community rather than the hospital and my perspective is much more patient centred and holistic.”

“RVCs are a slow burner but there is definitely a future for them within integrated respiratory care services.”



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Building confidence in a changing world

Fran Robinson reports on the PCRS National Respiratory Conference 2018 held at the Telford International Centre on 28/29 September



This year's PCRS National Respiratory Conference aimed to inspire delegates to think differently and find new ways of working with patients and colleagues in a changing world.

Speakers offered practical insights for improving respiratory care to help primary healthcare professionals to respond to the demands they face in primary and community care. Sessions offered a vision of a brighter future for respiratory patients and greater job satisfaction for respiratory professionals.

The conference opened with the unveiling of a PCRS rebrand which includes a new logo and redesigned website to reflect our move towards a more holistic and integrated approach to respiratory care.

PCRS Chair Dr Noel Baxter said: "The message that we want to strongly convey is that PCRS represents not only respiratory interested healthcare professionals working in primary and community care but also the interface with our secondary care colleagues as well. The new colours and redesigned website will ensure that we are more relevant digitally."

The plenaries

The opening plenary themed 'Confidence to treat the patient in front of you' began with a panel discussing how healthcare professionals could feel more confident diagnosing asthma and COPD and communicating the diagnosis effectively to the patient.

Mike McKeivitt, Director of Patient Services for the British Lung Foundation, said when most patients were first diagnosed with COPD it was probably the first time they had heard of the condition. They were likely to have felt stressed in the consultation, may not have understood what the diagnosis meant and would forget what the doctor said to them. "One of the important things post diagnosis is to follow up with the patient and their carers, provide them with additional information and referrals on to other people and organisations like Breathe Easy."

Deborah Waddell, Asthma UK specialist nurse said: "Patients often have a preconceived idea in their heads and are filled with fear about a diagnosis of asthma. Healthcare professionals need to not only communicate how they have made the diagnosis but also to check that the patient has really heard what they said."

Toby Capstick, a pharmacist consultant at Leeds Teaching Hospital NHS Trust, said community pharmacists often had difficulties working with newly diagnosed patients if they were not sure what the diagnosis was and would welcome better communication with GPs.

Noel Baxter said a single patient record that the pharmacist could access was one solution.





Pharmacist Garry Macdonald said it would help to have the diagnosis written on the prescription.

The interactive case-based Grand Round session was based on the theme of the four ages of lung health.

The key messages were:

- Treating patients is a partnership based on mutual trust and experience
- The factors that influence adherence to medication start to matter from the first consultation
- Roger Neighbour was right – the process of diagnosis begins even before you first see the patient
- The science of exacerbations and hospitalisation is no more important than the patterns of human behaviour
- Recognising untreatable traits and accepting them is a realistic way to apply evidence-based medicine to the individual

On a more light-hearted note, in the plenary at the end of the first day four candidates were asked to argue why their personal NHS waste issue should be consigned to Room 101 in a session based on the popular comedy show.

GP Dr Katherine Hickman told the conference that her pet hate was spirometry in primary care; Lay Reference Group member, Amanda Roberts, said hers was the annual asthma check-up; respiratory nurse consultant Vikki Knowles said hers were the NICE asthma guidelines; and physiotherapist Kelly Redden-Rowley declared that she objected to pulmonary rehabilitation at four weeks referral. Delegates voted to consign the NICE asthma guidelines to oblivion in Room 101.

There was something for everyone at the conference. The clinical sessions focused on getting the basics right and building on that foundation to improve care. Service development sessions showcased Best Practice abstracts and posters and presentations discussing innovative methodology being used to create system-wide change. Practical workshops, run by experienced trainers in conjunction with Education for Health, gave delegates an opportunity to refresh or learn new skills to improve respiratory care in their daily practice. The research stream gave delegates an opportunity to catch up with the latest developments in primary care respiratory research.

PCRS wishes to thank its conference partners Asthma UK, the British Lung Foundation and Education for Health and sponsors Astra Zeneca, Boehringer Ingelheim, Chiesi, NAPP Respiratory, Novartis and Pfizer.

Catch up on the Twitter conversation at #pcrsuk2018.

Clinical stream

Lung cancer

Challenging the diagnosis: could it be lung cancer yet?

Professor Michael Peake, Clinical Director, Centre for Cancer Outcomes, University College London Hospitals told delegates that late diagnosis is the main reason why long-term survival rates for lung cancer patients are so poor in the UK. He said primary care clinicians were in a difficult position because most early lung cancers are asymptomatic and symptoms – even when they occur – are often non-specific. However, the good news is that there has been some shift towards earlier diagnosis in recent years.

Learning points:

- Early diagnosis makes a huge difference. The majority of patients diagnosed with early stage lung cancer can expect to live more than five years, but most of those with late stage disease are dead within a year of diagnosis
- A combination of high-risk patient characteristics and symptoms can help GPs in the difficult task of identifying those most likely to have a diagnosis of lung cancer
- Early use of low-dose CT scans in high-risk patients can lead to early stage diagnosis in many patients. Costing £120, a CT scan is not expensive.

Asthma

Asthma Speed Bumps: what's getting in the way and slowing our progress?

Dr Ian Sinha, Consultant Respiratory Physician and Clinical Lead for the National Asthma and COPD Audit Programme (NACAP), discussed the difficulties in managing children with asthma and the problems with the current models of healthcare for children and young people with asthma.

What can be done?

- Go back to basics – get the diagnosis right, ensure every patient has a self-management plan and an annual review, prescribing is appropriate, inhaler technique is monitored, practices have named clinical asthma leads and follow-up appointments are made after emergency admissions
- Proactively identify children at risk and empower those around the child
- The National Asthma Audit in primary and secondary care should be grounded in quality improvement
- Invest in high quality, pragmatic research
- Rethink the ethos of the models we use to provide health-care

- Tackle the social determinants of health such as poverty and smoking at time of delivery, which impact on paediatric asthma outcomes

COPD

Is it time to stop prescribing rescue packs in COPD?

Dr John Hurst, Reader in Respiratory Medicine, UCL, examined the evidence for rescue packs and how to prescribe them effectively.

Learning points:

- Exacerbations are important events in COPD
- There is at best moderate benefit from antibiotics and steroids in treating exacerbations; prevention of exacerbations is better than cure
- Rescue packs in COPD are guideline-recommended, but only as part of a supported self-management plan
- Rescue packs in COPD are evidence-based, but not without risk
- For some people, most of the time, COPD rescue packs can be helpful – but monitor their use and question overuse

Shared decision making

Rachel Bryers, Shared Decision Making Programme Manager, Advancing Quality Alliance (AQuA) explained why shared decision making with patients is important.

The benefits include:

- Better consultations
- Clearer risk communication
- Greater compliance with ethical standards
- More appropriate decisions
- Fewer unwanted treatments, safer care
- Improved health literacy
- Improved confidence and self-efficacy
- Improved health behaviours
- Better health outcomes
- Reduced costs
- Less litigation

Respiratory research update

Dr Steve Holmes, GP and PCRS education lead, gave delegates a whistle-stop tour of the latest and most useful research papers on respiratory medicine.

Learning points:

- Guidelines, reviews and different trials do not always agree
- Evidence providing different results means we can apply clinically in different ways and give patients realistic choices
- There is an abundance of guidance, reviews and trials that continually challenge our thinking
- Understanding how the research has been undertaken gives a good clue as to what the result will be
- Guidelines are only the start of the journey to expert informed practice

Tobacco dependency

Louise Ross, Freelance Consultant at the National Centre for Smoking Cessation and Training (NCSCT) and Darush Attar-Zadeh, Respiratory Lead Pharmacist, Barnet CCG, discussed the place of e-cigarettes among other stop smoking treatments. They explained how e-cigarettes work and how they are regulated, the myths and facts around e-cigarettes and the impact of e-cigarettes on population health.

Service development stream

Strategies to stratify your COPD population to drive value

Optimising healthcare resources through risk stratification of COPD patients using GOLD

Dr Sanjeev Rana, GP and commissioner, discussed an initiative in West Essex which used risk stratification to understand the local population in order to better tailor treatment to disease severity.

What they achieved:

- Right Care data highlighted the need for change
- More COPD assessment test scores were recorded
- More exacerbation scores were recorded
- Financial savings were achieved
- The initiative mobilised further change in the system





- But not all practices signed up to the local enhanced service
- A variable amount of registered COPD obtained a GOLD score

Using virtual clinics to optimise prescribing in COPD

Jørgen Vestbo, Professor of Respiratory Medicine, University of Manchester explained how virtual clinics can optimise prescribing in COPD

Key points:

- COPD management in primary care can be improved
- There is a need for improved communication between primary care and secondary respiratory care
- Virtual clinics based on an open dialogue between secondary care COPD specialists and GPs/primary care nurses may be one option
- Individualised pharmacological treatment is the future
- There are other options than pharmaceutical treatment – smoking cessation, pulmonary rehabilitation and physical activity should always be discussed

Quality assured diagnostic service provision

Lisa Chandler, Public Health Principal, set out the commissioner's perspective:

- Be clear what you want to achieve
- Set up a respiratory group that includes all key players – work together
- Use local levers
- Measure all outcomes and then understand them
- The commissioner is an ally

Katherine Plumbe, Consultant Respiratory Physiotherapist set out the trainer's perspective:

- Quality assured spirometry is fundamental and a register of competent healthcare professionals is important
- There are options in how this is achieved – by local register or ARTP – either is better than nothing
- Training must suit the commissioning organisation and the individual healthcare professional
- There are a variety of options available to achieve the training and competency assessment
- Annual updates and revalidation are key

Driving change through quality improvement (QI) to improve respiratory outcomes

Kay Cordiner, Strategic Clinical Network Manager and Value Project Lead, NHS Highland, explained the Highland Quality Approach which involves relentlessly pursuing the highest quality outcomes of care.

Learning points:

- Front-line staff can be empowered to impact quality and cost
- Change through improvement methodology gives sustainability
- The importance of data over time
- Measuring staff experience matters
- Staff doing the work are the authors to the solution.

Susan Fairlie, Managing Director Mindset Matters Ltd, gave an introduction to the Quality Champion Programme model, explained the key components of leading change and the importance of personal resilience. She also gave some tips on how to create a social movement to cultivate a culture for QI across organisations, discussed some case studies in different settings and explained how to measure success.

Optimising the use of healthcare resources through correct diagnosis

Dr Stephen Gaduzo, GP, Stockport, discussed a one-stop model breathlessness, rapid evaluation, assessment, treatment and health education clinic in the North West.

Learning points:

- Think differently if you want to make change
- Involve all parts of the system
- Identify key stakeholder, enablers, blockers
- Culture change may be slow but effect is lasting
- Prepare for unplanned unexpected benefits and problems

Liz Wilson, Respiratory Specialist Nurse Adviser, National Services for Health Improvement (NSHI), described her experience of implementing the asthma diagnosis pathway in general practice in North Birmingham.

Learning points:

- Always read your PCRS emails as you never know what opportunities are out there
- Get involved, do not wait for changes to happen to you, be part of the discussion
- Pathways and guidance are really helpful and should supplement not replace history taking and clinical judgement

- FeNO is simple and easy to use in all age groups
- Spirometry in children is not easy; specialist training is required.

Providing sustainable pulmonary rehabilitation (PR) across a health economy

Victoria McKelvie, NW Regional Clinical Lead and Respiratory Nurse Specialist, BOC Healthcare, discussed providing PR across a sustainable health economy.

Learning points:

- Record outcome measurements
- Report outcomes
- Integrate PR within existing structures
- Non-clinical outcomes are important too
- Get the balance right

Corinne Robinson, Clinical Specialist Physiotherapist and Community Respiratory Service Lead, Sirona Care and Health, discussed a PR service design approach, the outcomes adopted and the implementation of a digital alternative for PR.

Lessons learned from improving PR locally:

- Understand the barriers to engagement
- Challenge your working hours
- Offer home-based PR
- Education is needed in primary care about the value of PR
- Use digital technology to promote PR in primary care
- Establish an Active Breathing Group supported by the Council
- Work with the BLF on an Integrated Breathe Easy Programme Development

Parity of esteem in respiratory care

Alan Cohen, retired GP, Jericho, Oxford, talked about how the GP can help people with a severe mental illness (SMI). This is important because people with a SMI die 15–20 years earlier than they would have done had they not had an SMI. The cause of this premature mortality is due to long-term conditions such as diabetes, cardiovascular disease and COPD, and all of these conditions are made worse by smoking. One in three of all cigarettes consumed in England are by people with a mental health disorder. People with a mental health disorder want to stop smoking as much as everybody else but have a higher expectation of failure. Smoking cessation interventions are effective in this group, and therefore should be offered to all those with a mental health disorder.

What the GP should do:

- Every person with SMI should be asked on every visit if they smoke tobacco. The response should be recorded in the clinical record
- Smoking cessation advice should be offered to people with SMI who smoke tobacco
- Smokers should be reviewed to monitor the development of COPD

Cheryl Malhotra, Stop Smoking Facilitator and Mental Health Lead, West London Mental Health Trust and Rubyni Krishnan, Deputy Service Manager, West London Mental Health Trust discussed how they made a mental health trust smoke-free.

What they did:

- Ensured staff were trained to provide very brief advice and basic knowledge on supporting people around tobacco dependence
- Implementing smoke-free was a challenge, so it was important to remain resilient to ensure patients' health was a priority
- Strong leadership and accountability was paramount throughout to implement and review the policy
- To ensure access for all service users including community was available, they offered training to medical staff, local GPs, pharmacies and mental health recovery workers

Best Practice poster

Winners: Laura Grimwood and Vanessa Sellers

Significant numbers of PR patients need help with written patient information

This poster explained an audit which highlighted a need to address health illiteracy among patients attending pulmonary rehabilitation (PR).





The authors identified that a significant proportion of patients in their area needed help completing written paperwork during PR.

This raised a concern that this might be a national problem. Existing and emerging literature suggests that poor health literacy is both a national and worldwide concern and is linked to poor clinical outcomes.

So the researchers sent a questionnaire to PR patients across nine regions and 25 venues. A total of 261 patients completed questionnaires, which revealed that 20% had below functional literacy, 26% needed help with understanding forms, letters and medicine labels and 43% reported difficulty remembering things. One in five patients (20%) said they had trouble following a conversation, 6% reported that English was not their first language, 3% said they had learning difficulties, 36% said they had hearing difficulties and 19% had eyesight problems.

The researchers said: "Further work needs to be done regarding patient education across all health services, not just pulmonary rehabilitation. The findings indicate that a significant number of patients may not be able to effectively self-manage due to health literacy, memory, cognition, eyesight, hearing and language barriers. This raises concerns regarding the safety, reliability and practicality of patients self-managing their respiratory condition."

The judges Dr Andy Whittamore, GP and Clinical Lead at Asthma UK and Viv Marsh, Asthma and Allergy Clinical Lead at Education for Health, said: "This was a really stimulating poster which looked at how we provide information to patients prior to attending PR. It identified an issue which transcends all areas of medicine and nursing. We cannot assume that patients understand or can action information we give them.

"We need to consider more simple language is needed if we are to communicate effectively with our patients and activate them whether referring to PR, explaining disease symptoms or treatments, stopping smoking, action plans or inhaler techniques. Perhaps we need to assess every patient for their literacy level."

The judges also commented that the standard of Best Practice/Service Development posters submitted to the PCRS conference was very high this year and provided a lot of learning for respiratory healthcare professionals and commissioners to improve what they do in their practices or community.

The underlying theme of the posters was that improved communication created better outcomes, whether it was between healthcare professionals and patients, healthcare professional to healthcare professional or between healthcare professionals and commissioners.

Practical workshops

Inhaler technique

Learning points:

- Inhaler technique is important:
 - o to ensure maximal benefit from inhaled medicines
 - o to reduce the risk of adverse effects
 - o to prevent inappropriate escalation of treatment and reduce costs
- Up to 90% of patients may not be able to use an MDI effectively
- 91% of healthcare professionals who teach use of an MDI cannot demonstrate it effectively

Spirometry interpretation

Learning points:

- Quality assured diagnostic spirometry contributes to accurate and timely diagnosis for patients
- To ensure spirometry is fit for purpose, use a systematic approach to interpret spirometry step by step
- Use of the lower limit of normal (LLN) for identifying obstruction
- Spirometry is only one part of the assessment and should always be interpreted alongside the clinical history and other relevant investigations when making a diagnosis
- Don't be afraid to challenge historic diagnoses or those that lack supporting evidence
- Where initial results are borderline or unexpected, do not use a 'one off' spirometry test to make a diagnosis

Tackling tobacco dependency during a consultation

Learning points:

- Recognise your role as a healthcare professional in tackling tobacco dependency during a consultation
- Understand the principles of Very Brief Intervention (VBA)
- Be aware of accessible resources to support your role
- Apply motivational interviewing (MI) techniques
- Appreciate how a carbon monoxide monitor can be useful as a motivational change tool to support and sustain a quit attempt

Cognitive behavioural therapy (CBT) in a 10-minute consultation

Learning points:

- In CBT it is not the event that is important, it is what we think about it
- CBT helps you and your patient understand their difficulties and make sense of their problems (including their situation, physical symptoms, thoughts, feelings, behaviour)
- It helps identify/change unhelpful thinking or behaviour to more helpful ways of managing/coping
- A range of cognitive and behavioural self-help tools and techniques can be applied in all situations
- CBT techniques can be incorporated into everyday care

Home oxygen therapy: your role

The session covered:

- Understanding when referral to a Home Oxygen Service Assessment and Review (HOSAR) for home oxygen therapy assessment is indicated.
- The home oxygen therapy assessment and the equipment options available
- Knowing what to do if HOSAR is not available or appropriate
- Understanding the practicalities patients face with home oxygen, and how it impacts on their lives.

The chest examination

The session covered:

- Recognising when chest auscultation is appropriate
- Listening to normal breath sounds
- Recognising abnormal breath sounds
- How to link abnormal breath sounds to illness or disease

Horrible histories: How to take a structured patient history

Learning points:

- Introduce self, explain process and establish rapport
- Active listening: invite the story, use open and closed questions
- Make empathetic responses, respond to patient needs
- Offer reassurance, avoid false reassurance
- Summarise – share your thinking

Is FeNO feasible?

Learning points:

- Fractional exhaled nitric oxide (FeNO) is a marker of eosinophilic airway inflammation
- A raised FeNO result is a predictor for steroid sensitivity
- The use of FeNO in asthma diagnosis is included in both BTS/SIGN and NICE guidelines, although the emphasis on importance differs between the two
- While cost may prohibit delivery of FeNO at practice level, services at a larger level are being delivered

Asthma action plans in action

Learning points:

- Asthma action plans reduce the risk of asthma attacks
- They are most effective as part of supported self-management education
- Shared decision-making and engaging patients in developing their action plans are critical success factors

Research stream

The *npj Primary Care Respiratory Medicine* research stream was dedicated to showcasing the cutting edge of scientific research in respiratory primary care.

Dr Helen Ashdown, PCRS research lead, said the research abstracts submitted this year were of an extremely high quality, and the redesign of the conference programme so that the research stream was entirely dedicated to scientific research presentations meant that many more abstracts than previously could be presented as oral presentations.

This worked well and enabled some good discussion and feedback for authors, often at a stage before they have published their work, and so informing the published research.



Primary Care Respiratory Update

Helen said: "We had presenters from across the UK and a range of qualitative and quantitative research presented, including clinical trials, database studies and systematic reviews, across many clinical topics, and also included some large programme grants in progress.

"What struck me from this is how much respiratory research has previously taken place in secondary care, which isn't directly applicable to the primary care population, and so it's great to see so much primary care-based research in progress in the abstracts presented, and that we continue to build on this for the future."

Best research poster

Winners: Mark Sanders, Managing Director, and Ashley Green, Head of Engineering, Clement Clarke International

COPD severity influences patients' ability to use their inhalers

This poster reported that COPD disease severity influences a patient's ability to use capsule inhalers. It concluded that some capsule inhalers may be beyond the capability of some COPD patients to use correctly.

The poster explained that, while capsule inhalers appear similar, there are differences in duration of capsule emptying and inspiratory power that may be clinically relevant.

Inspiratory power assessments may represent an important consideration for inhaler device selection and merits further investigation, said the researchers.

Helen Ashdown said the finding that some patients may not be able to use their inhalers correctly was of clear clinical importance when selecting choice of devices. "This research is another reminder of the need for a personalised approach to treatment decisions which we heard throughout the conference," she said.

This poster achieved the highest scoring on criteria including the clarity and impact of the poster, presentation and underlying science.

Best original research abstract

Winner: Professor Nick Francis, Cardiff University

This abstract described a large randomised controlled trial in primary care investigating the use of CRP point-of-care testing for reducing antibiotic use for exacerbations of COPD.

"While we can't give away the results in print as they have yet to be published, it was fantastic for conference delegates to be some of the first to hear about real practice-changing findings, which should make their way into guidelines in years to come, and play an important part in helping to reduce the global problem of antimicrobial resistance," said Helen.

You can view some of the abstracts presented and displayed at Conference on pages 52 to 71.



Collaborations and partnership: vital tools for successful research

A report from the annual PCRS research workshop for respiratory researchers by **Dr Helen Ashdown, GP and PCRS Research Lead**



This year our pre-conference research workshop was on the theme of collaborations and partnership and how to achieve this effectively for practice-changing research.

Attended by 19 delegates, the afternoon had three parts. The first was a talk from Amanda Roberts, a member of the PCRS Lay Reference Group, who discussed how researchers can work effectively in partnership with patients.

She gave us a useful perspective on the role of the patient in research, and how to get the most out of patient involvement, whilst respecting and providing for their physical and psychological needs. She stressed the importance of aiming to involve patients in research rather than just asking them. She highlighted resources to use for involving patients in research such as INVOLVE (invo.org.uk).

Then we heard from Steph Taylor, Professor in Public Health and Primary Care, Queen Mary University of London, who talked us through different collaborations and how to achieve them successfully. Collaborations can be within and between institutions, as well as with patients. The Asthma UK Centre for Applied Research (<https://www.aukcar.ac.uk/>) is a good example of an effective collaboration.

All delegates then gave an elevator pitch about their current role and research in progress. What struck me was the range of professional backgrounds of those currently doing primary care research and what a multi-disciplinary group we now are. We include health psychologists, physiotherapists, respiratory nurse specialists and this richness that adds to the research we can achieve.

Lastly we broke into small groups where we talked about various issues and shared experiences and solutions. One example discussed was that patients with COPD may have low

How to form successful collaborations

Steph Taylor suggested:

- Consider a mentor – ideally not too distant in career stage terms but from a different part of university, so not working with them directly
- Attend seminars, journal clubs, interest groups and writing groups – reach out across disciplines or establish a group with an identity
- Work towards internal collaborations as well as external. Useful external collaborations include SAPC (Society for Academic Primary Care), NAPCRG (North American Primary Care Research Group), WONCA (World Organization of Family Doctors), IPCRG (International Primary Care Respiratory Group), Soc soc med (Society for Social Medicine and Population Health) – many of these have bursaries for early career researchers
- Contact leaders and arrange visits to other institutions
- Invite speakers to come to your department
- Think about collaborations/involvement of other stakeholders (eg, respiratory nurses, physiotherapists, policymakers), not just patients

health literacy, and therefore postal recruitment discriminates against those who cannot read. Ethics committees have been persuaded of the importance of other methods such as telephone recruitment as an effective way of widening participation in research, so that as many patients as possible can be involved.

This was a very successful afternoon and several people realised through the presentations and discussions that they were doing similar areas of research and got together to discuss it further – so truly collaboration in action!

**WHICH ICS/LABA
HELPS MORE
PATIENTS IMPROVE
ASTHMA
CONTROL?**

Prescribing information and details on adverse event reporting can be found on the next page.



RELVAR ELLIPTA

(fluticasone furoate/vilanterol)

Relvar Ellipta was superior to other ICS/LABAs (usual care) in helping more patients improve asthma control in everyday clinical practice in the Salford Lung Study.¹ The most commonly used ICS/LABAs were: Seretide (fluticasone propionate/salmeterol), Symbicort, Fostair.² Data presented are from a subset of patients in the PEA population prescribed ICS/LABA at randomisation.¹

RELVAR ELLIPTA
fluticasone furoate/vilanterol

Read the clinical data at relvarhcp.co.uk

PEA, primary effectiveness analysis.

References: 1. Woodcock A *et al. Lancet.* 2017;390(10109):2247–2255. 2. GSK DoF RF/FFT/0019/18.

Prescribing information

Please consult the full Summary of Product Characteristics (SmPC) before prescribing. **Relvar Ellipta (fluticasone furoate/vilanterol [as trifenate]) Inhalation powder.**

Each single inhalation of fluticasone furoate (FF) 100 micrograms (mcg) and vilanterol (VI) 25 mcg provides a delivered dose of 92 mcg FF and 22 mcg VI. Each single inhalation of FF 200 mcg and VI 25 mcg provides a delivered dose of 184 mcg of FF and 22 mcg of VI. **Indications:** *Asthma:* Regular treatment of asthma in patients ≥ 12 years where a long-acting β_2 -agonist (LABA) and inhaled corticosteroid (ICS) combination is appropriate; i.e. patients not adequately controlled on ICS and "as needed" short-acting inhaled β_2 -agonists or patients already adequately controlled on both ICS and LABA. *COPD:* Symptomatic treatment of adults with COPD with a FEV₁ <70% predicted normal (post-bronchodilator) and an exacerbation history despite regular bronchodilator therapy. **Dosage and administration:** Inhalation only. *Asthma:* Adults and adolescents ≥ 12 years: one inhalation once daily of Relvar 92/22 mcg for patients who require a low to mid dose of ICS in combination with a LABA. If patients are inadequately controlled then the dose can be increased to one inhalation once daily Relvar 184/22 mcg. Relvar 184/22 mcg can also be considered for patients who require a higher dose of ICS in combination with a LABA. Regularly review patients and reduce dose to lowest that maintains effective symptom control. *COPD:* One inhalation once daily of Relvar 92/22 mcg. Relvar 184/22 mcg is not indicated for patients with COPD. **Contraindications:** Hypersensitivity to the active substances or to any of the

excipients (lactose monohydrate & magnesium stearate).

Precautions: Pulmonary tuberculosis, severe cardiovascular disorders or heart rhythm abnormalities, thyrotoxicosis, uncorrected hypokalaemia, patients predisposed to low levels of serum potassium, chronic or untreated infections, diabetes mellitus, paradoxical bronchospasm. In patients with moderate to severe hepatic impairment 92/22 mcg dose should be used. **Acute symptoms:** Not for acute symptoms, use short-acting inhaled bronchodilator. Warn patients to seek medical advice if short-acting inhaled bronchodilator use increases. Therapy should not be abruptly stopped without physician supervision due to risk of symptom recurrence. Asthma-related adverse events and exacerbations may occur during treatment. Patients should continue treatment but seek medical advice if asthma symptoms remain uncontrolled or worsen after initiation of Relvar. **Systemic effects:** Systemic effects of ICSs may occur, particularly at high doses for long periods, but much less likely than with oral corticosteroids. **Possible Systemic effects include:** Cushing's syndrome, Cushingoid features, adrenal suppression, decrease in bone mineral density, growth retardation in children and adolescents. Eye symptoms such as blurred vision may be due to underlying serious conditions such as cataract, glaucoma or central serous chorioretinopathy (CSCR); consider referral to ophthalmologist. More rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression or aggression (particularly in children). Increased incidence of pneumonia has been observed in patients with COPD receiving inhaled corticosteroids. **Risk factors for pneumonia include:** current smokers, old age, patients with a history of prior pneumonia, patients with a body mass index <25kg/m² and patients with a FEV₁ <50% predicted. If pneumonia occurs with Relvar treatment should be re-evaluated. Patients with rare hereditary problems of galactose intolerance, the Lapp

lactase deficiency or glucose-galactose malabsorption

should not take Relvar. **Interactions with other medicinal products:** Interaction studies have only been performed in adults. Avoid β -blockers. Caution is advised when co-administering with strong CYP3A4 inhibitors (e.g. ketoconazole, ritonavir, cobicistat-containing products). Concomitant administration of other sympathomimetic medicinal products may potentiate the adverse reactions of FF/VI. Relvar should not be used in conjunction with other long-acting β_2 -adrenergic agonists or medicinal products containing long-acting β_2 -adrenergic agonists. **Pregnancy and breast-feeding:** Experience limited. Balance risks against benefits. **Side effects:** *Very Common* ($\geq 1/10$): headache, nasopharyngitis. *Common* ($\geq 1/100$ to <1/10): candidiasis of the mouth and throat, dysphonia, pneumonia, bronchitis, upper respiratory tract infection, influenza, oropharyngeal pain, sinusitis, pharyngitis, rhinitis, cough, abdominal pain, arthralgia, back pain, fractures, pyrexia, muscle spasms. Other important side effects include: *Uncommon* ($\geq 1/1,000$ to <1/100): blurred vision, hyperglycaemia. *Rare* ($\geq 1/10,000$ to <1/1,000) paradoxical bronchospasm and hypersensitivity reactions including anaphylaxis, angioedema, rash, urticaria. See SmPC for other adverse reactions. **Legal category:** POM. **Presentation and Basic NHS cost:** Relvar Ellipta. 1 inhaler x 30 doses. *Relvar Ellipta 92/22* - £22.00. *Relvar Ellipta 184/22* - £29.50. **Marketing authorisation (MA) nos. 92/22 mcg 1x30 doses [EU/1/13/886/002]; 184/22 mcg 1x30 doses [EU/1/13/886/005]. MA holder:** Glaxo Group Ltd, 980 Great West Road, Brentford, Middlesex TW8 9GS, UK. **Last date of revision:** September 2018. UK/FFT/0227/15(6). Trademarks are owned by or licensed to the GSK group of companies. © 2018 GSK group of companies or its licensor. Relvar Ellipta was developed in collaboration with Innoviva Inc.

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard or search for MHRA Yellowcard in the Google Play or Apple App store. Adverse events should also be reported to GlaxoSmithKline on 0800 221 441

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What else could it be?

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

In this short case discussion **Fran Robinson** interviews **Dr Stephen Gaduzo** as they discuss John, an amateur footballer who has recently been diagnosed with asthma



John is a keen amateur footballer who has been diagnosed with asthma and is taking inhaled steroids after going to his GP complaining of a cough. He returned to see his GP when his cough didn't get better and the GP increased his treatment.

One day, during a football match, another member of the team, who is a respiratory specialist, comments on John's cough. John tells him about his treatment and the fact that he is no better now after six weeks on inhaled corticosteroids and his reliver inhaler doesn't relieve his symptoms at all. His friend recommends that he goes back to his GP stating "If you asthma treatment isn't working, then perhaps the diagnosis is not correct".

When John returns to his GP for the third time, he agrees to investigate further and sends him for a chest X-ray which reveals that he has a very large hiatus hernia. John is then treated for his hiatus hernia with high dose Proton Pump Inhibitor (PPI) therapy after which his symptoms improve. He is later referred on and has laparoscopic fundoplication surgery and his cough is eradicated.



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This case study demonstrates several important points. Firstly, if a patient has a cough, you should not always assume it is as a result of asthma or other respiratory disease. If you think it might be asthma you should also be looking for a symptom of wheeze. You should ask the patient what sound they call a wheeze, who has heard it and also ask them what they mean by wheeze. Don't take their word for it that they have a wheeze because what they describe as a wheeze might not be. Think also of family history, atopy, triggers, symptom variability, etc.

Secondly, if you diagnose someone with suspected asthma, and treat them for asthma, the

patient should see some response and improvement after six weeks. If there is no response you should start to be suspicious that there is something else going on. This message is clear in both the NICE¹ and BTS/SIGN² asthma guidelines and in our own *PCRS Consensus Statement on Asthma*³ which provides clarity on aspects of asthma diagnosis, management and monitoring.

John's story is a timely reminder that, if you start a patient on a new treatment for suspected asthma, you should arrange for them to come back after an appropriate time for review. Simply giving them an inhaler and sending them on their way is not good enough, you need to assess the

response. If there has been an improvement, it's a good opportunity to do the basics – check concordance, inhaler technique, smoking habits, other lifestyle issues, education about therapy and self-management.

There are some very important safety net questions to ask too. If the patient is a smoker, has there been any systemic change? Ask about weight loss, appetite, pain, ankle oedema and haemoptysis. Appropriate action and further investigation can then follow such as John's CXR. As in John's case, a first step should be to ask for a CXR on any patient who has had an unexplained cough for more than four to six weeks. The concern in your mind should be that you don't miss an early diagnosis of lung cancer. Here again, review is important – remember a normal CXR does not guarantee it's not a neoplasm.

A useful pointer in this case, suggesting the possibility of reflux oesophagitis, was that his cough had not got better after being given treatment for asthma. The cause of a cough may not be obvious, and may be difficult to diagnose confidently – even at my local tertiary care specialist cough clinic, as many as one third of patients don't go away with a definitive diagnosis after extensive (and often invasive) investigation.

Other conditions you should take into account are COPD, bronchiectasis and upper respiratory causes such as postnasal drip with allergy. You may also consider, in a young adult who has a productive purulent cough whether it could be alpha-1 trypsin deficiency; or in children, could this be persistent bacterial bronchitis? Both are rare but important conditions to identify and treat.

Oesophageal reflux may cause symptoms of heartburn, but may also be the cause of cough without gastrointestinal (GI) symptoms. The patient may describe the cough being worse when lying down, during or soon after meals. Typical symptoms may include cough starting soon after waking and getting up. Cough due to reflux may also occur on speaking, singing and laughing. The Hull Cough Questionnaire⁴ can be very helpful.

Treatment with PPI and H2 antagonists can help reduce acid, though not necessarily stop the mechanical reflux causing the cough. Other drugs can alter gastric motility and improve lower oesophageal sphincter tone. Patients can be advised on self-management tips which can also help alleviate symptoms such as reducing weight, reducing caffeine intake, not eating heavy meals especially in evening and employing a strategy of not eating after 9pm as well as using antacid medication at bedtime. Ultimately, referral to GI surgeons for oesophageal manometry and pH monitoring may lead to fundoplication surgery, now usually performed laparoscopically.

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Hallmark Hotel Derby Midland

Event Co-Chairs: Noel Baxter and Garry McDonald

Bringing out the best in yourself and others

8th - 9th November

Ramada Birmingham Solihull

Event Co-Chairs: Clare Cook and Liz Wilson

For more information about our workshops visit us online

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





Policy Round-Up

Bronwen Thompson, *PCRS 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

Respiratory disease to become a high priority in England and Scotland

Respiratory disease has come up the agenda in both England and Scotland and will feature prominently in their future plans as a high priority area for improvement. The recognition that respiratory crises contribute to winter pressures, increasing awareness of the widening mortality gap according to deprivation levels, and poor standing of the UK's mortality and admission rates from respiratory disease compared with other developed countries are all contributing to a higher focus on respiratory disease at national level.

So both countries are looking at the aspects of respiratory disease which can be improved in order to improve outcomes. In England we are expecting to see a fresh and more integrated approach to diagnosis, with an exploration of diagnostic services which may focus on breathlessness generically rather than being respiratory-specific. There is also interest in more structured education for people with lung disease, along the lines of DESMOND and DAFNE in diabetes. Pulmonary rehabilitation will also attract attention as a neglected and inequitably provided area of treatment, when the evidence is so strong for the benefits it brings patients. For more information about England's focus on respiratory disease, see the interview with the NHS England National Director for Respiratory Disease, Professor Mike Morgan on page 9.

Scotland is developing a Respiratory quality improvement plan which will build on the thinking from 'Realistic medicine', which is led by the Chief Medical Officer for Scotland. This will cover major areas such as COPD, pulmonary fibrosis, bronchiectasis diagnosis and management, severe asthma and the role of biologics.

Simultaneously, several health boards are looking at managing winter pressures proactively, and are focusing their attention on those COPD patients who are most likely to cause pressure on beds. The number of very severe COPD patients comprises a very small proportion of all COPD, so it may be the moderate

to severe patients to whom they target their proactive interventions. Providing a multifaceted and systematic intervention including flu vaccination, pulmonary rehabilitation, support with inhaler technique, rapid and appropriate access to emergency medication, for example, is expected to reduce admissions, readmissions and unscheduled care in that group of patients who potentially could become a significant burden to hospitals. This 'respiratory winter bundle' is a proactive approach to targeting the effort at some of the most vulnerable – but also resource-intensive – COPD patients.

NHS RightCare to develop care pathways for asthma and pneumonia

After publishing a COPD pathway in January of this year, NHS RightCare is now starting work on pathways for asthma and pneumonia. The output of this work will be succinctly presented pathways from prevention through to severe asthma or life-threatening pneumonia, based on available evidence for each stage of the pathway, for use by commissioners, clinicians and social care. Several PCRS members will be actively involved in the development of these pathways so that they are practical and workable for primary and community care. See <https://www.england.nhs.uk/rightcare/products/pathways/chronic-obstructive-pulmonary-disease-copd-pathway/> for COPD pathway link.

What's new in respiratory prescribing?

There have been several developments to support better prescribing in respiratory disease in recent months.

- A Respiratory Prescribing Dashboard has been developed by a group of respiratory physicians in collaboration with NHS Business services authority. Their aim is to make it easy for health economies to look at some key indicators of quality prescribing – such as high-dose inhaled corticosteroids (ICS) items as a percentage of all ICS items, prescribing frequency of prednisolone 5 mg tablets and products for treating tobacco dependency, excess short-acting beta agonist

(SABA) prescribing and numbers of COPD patients on triple therapy. Easy access to such key measures and analysis of prescribing will enable CCGs in England and practices to review their respiratory prescribing and seek to bring it in line with best practice as described in evidence-based guidelines. The dashboard highlights the variation in respiratory prescribing across CCGs in England. CCGs and local health economies can use this data at a local level to ascertain how their area is performing, and determine how they may wish to address this. <https://www.nhsbsa.nhs.uk/epact2/dashboards-specifications/respiratory-dashboard>

- Like buses, sometimes several good things come along at the same time. The Evidence Based Medicine DataLab in Oxford has developed a tool – across all areas of medicine – which enables practices and CCGs to look at NHS England prescribing data in a much more user-friendly way. They have identified 59 key areas of prescribing, and for these you can review prescribing in your practice or CCG, undertake specific analyses and spot national trends. You can also set up your own enquiries on specific topics outside the list of 59. It is very easy to use, and we expect their currently short list of respiratory indicators to increase over time. <https://openprescribing.net/>
- The scope of the COPD guideline being updated by NICE and due out before Christmas did not originally include giving guidance on the use of triple therapy (in a single or multiple inhalers) or the most appropriate duration of a course of inhaled steroids following an exacerbation. In our comments on the draft guideline, PCRS encouraged NICE that they should include these areas and NICE announced in September that it would extend the scope of the guideline to incorporate these areas. In order not to delay publication of the whole guideline, these guidance sections will follow in mid-2019.
- NICE has given provisional go-ahead for a new product for severe asthma to be prescribed. The draft guidance recommends benralizumab (Fasenra, AstraZeneca) for people who have severe eosinophilic asthma. It is being proposed as an option for treating eosinophilic asthma when usual therapies such as inhaled corticosteroids and beta-agonists do not adequately control the condition. The drug was considered cost-effective for people who have had at least three exacerbations in the last year, a blood eosinophil count of ≥ 400 cells/L and only when biological treatment with mepolizumab is not appropriate. Benralizumab is given as an injection every four weeks for the first three doses and every eight weeks following. The list price is £1,955 per 30 mg pre-filled syringe and the company has agreed a confidential discounted price.

News from NICE on respiratory developments

- More good news for people with severe asthma – NICE has given provisional approval for the use of bronchial thermoplasty for people with severe asthma. The aim of bronchial thermoplasty for severe asthma is to reduce the smooth muscle mass lining the airways, decreasing their ability to constrict. The procedure is usually done with the patient under sedation or general anaesthesia. A catheter is introduced into the bronchial tree. Short pulses of radiofrequency energy are applied circumferentially to sequential portions of the airway wall, moving from the distal to the proximal bronchi. Treatment is usually delivered in three sessions with an interval of at least three weeks between each session. After the first session, treated airways are evaluated by bronchoscopy before proceeding with further treatment. Provisional advice is that the procedure should only be done by a multidisciplinary team in specialist centres with on-site access to intensive care. It should only be done by clinicians with training in the procedure and experience in managing severe asthma. Clinicians should enter details of all patients who have the procedure on to the UK Severe Asthma Registry.
- NICE has issued draft guidance on the prescribing of antimicrobials for several respiratory infections. NICE recommends that antibiotics are not prescribed for cough in the first instance. Honey and over-the-counter medicines should be used first to treat a cough since most acute coughs are caused by a cold or virus, and will resolve in around three weeks without antibiotics. Final guidance is expected in December. In COPD exacerbations, antibiotics should be prescribed for a severe acute exacerbation, but only ‘considered’ if the acute exacerbation is not severe. Final guidance is expected in December. In exacerbations of bronchiectasis, NICE advises that a sputum sample should be sent for culture and susceptibility testing, antibiotic treatment initiated, and that the initial choice of antibiotic should be reviewed once the results of culture and susceptibility testing are known. They also give guidance on when it is appropriate to refer to secondary care.
- Guidance has been published on providing emergency and acute medical care services for over 16s. NICE looks at the primary/secondary care interface, what should happen in hospitals, and gives advice for those planning services. The first recommendation to highlight is relevant to respiratory infection:
 - Provide point-of-care C-reactive protein testing for people with suspected lower respiratory tract infections.

Continued on page 34

A logical choice

of maintenance treatment to help prevent exacerbations of COPD



 **Chiesi**

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

Prescribing information can be found overleaf

Trimbow[®]

beclometasone/formoterol/
glycopyrronium (87/5/9 mcg)
a combination of 3 established
compounds in an extrafine formulation

Inspired logic



CHTRI20170962F(1) Oct 2017

Prescribing Information

Trimbow 87/5/9 Pressurised Metered Dose Inhaler (pMDI) Prescribing Information

Please refer to the full Summary of Product Characteristics (SPC) before prescribing.

Presentation: Each Trimbow 87/5/9 pMDI delivered dose contains 87micrograms (mcg) of beclomethasone dipropionate (BDP), 5mcg of formoterol fumarate dihydrate (formoterol) and 9mcg of glycopyrronium. This is equivalent to a metered dose of 100mcg BDP, 6mcg formoterol and 10mcg glycopyrronium. **Indications:** Maintenance treatment in adult patients with moderate to severe chronic obstructive pulmonary disease (COPD) not adequately treated by a combination of an inhaled corticosteroid (ICS) and a long-acting beta₂-agonist (for effects on symptoms control and prevention of exacerbations see section 5.1 of SPC). **Dosage and administration:** For inhalation in adult patients (≥18 years), 2 inhalations twice daily (bd). Can be used with the AeroChamber Plus® spacer device. BDP in Trimbow is characterised by an extrafine particle size distribution which results in a more potent effect than formulations of BDP with a non-extrafine particle size distribution (100mcg of BDP extrafine in Trimbow are equivalent to 250mcg of BDP in a non-extrafine formulation). **Contraindications:** Hypersensitivity to the active substances or to any of the excipients. **Warnings and precautions:** Not for acute use in treatment of acute episodes of bronchospasm or to treat COPD exacerbation. Discontinue immediately if hypersensitivity or paradoxical bronchospasm. **Deterioration of disease:** Trimbow should not be stopped abruptly. **Cardiovascular effects:** Use with caution in patients with cardiac arrhythmias, aortic stenosis, hypertrophic obstructive cardiomyopathy, severe heart disease, occlusive vascular diseases, arterial hypertension and aneurysm. Caution should also be used when treating patients with known or suspected prolongation of the QTc interval (QTc > 450 milliseconds for males, or > 470 milliseconds for females) either congenital or induced by medicinal products. Trimbow should not be administered for at least 12 hours before the start of anaesthesia as there is a risk of cardiac arrhythmias. Caution in patients with thyrotoxicosis, diabetes mellitus, pheochromocytoma and untreated hypokalaemia. Increase in pneumonia and pneumonia hospitalisation in COPD patients receiving ICS observed. Clinical features of pneumonia may overlap with symptoms of COPD exacerbations. Systemic effects of ICS may occur, particularly at high doses for long periods, but are less likely than with oral steroids. These include Cushing's syndrome, Cushingoid features, adrenal suppression, growth retardation, decrease in bone mineral density, cataract, glaucoma and more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression and aggression. Use with caution in patients with pulmonary tuberculosis or fungal/viral airway infections. Potentially serious hypokalaemia may result from beta₂-agonist therapy. Formoterol may cause a rise in blood glucose levels. Glycopyrronium should be used with caution in patients with narrow-angle glaucoma, prostatic hyperplasia or urinary retention. Use in patients with severe hepatic or renal impairment should only be considered if benefit outweighs the risk. **Interactions:** Since glycopyrronium is eliminated via renal route, potential drug interactions could occur with medicinal products affecting renal excretion mechanisms e.g. with cimetidine (an inhibitor of OCT2 and MATE1 transporters in the kidney) co-administration, glycopyrronium showed a slight decrease in renal excretion (20%) and a limited increase in total systemic exposure (16%). Possibility of systemic effects with concomitant use of strong CYP3A inhibitors (e.g. ritonavir, cobicistat) cannot be excluded and therefore caution and appropriate monitoring is advised. **Related to formoterol:** Non-cardioselective beta-blockers (including eye drops) should be avoided. Concomitant administration of other beta-adrenergic drugs may have potentially additive effects. Concomitant treatment with quinidine, disopyramide, procainamide, anticholinergics, monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants and phenothiazines can prolong the QTc interval and increase the risk of ventricular arrhythmias. L-dopa, L-thyroxine, oxytocin and alcohol can impair cardiac tolerance towards beta₂-sympathomimetics. Hypertensive reactions may occur following co-administration with MAOIs including drugs with similar properties (e.g. furazolidone, procabazine). Risk of arrhythmias in patients receiving concomitant anaesthesia with halogenated hydrocarbons. Concomitant treatment with xanthine derivatives, steroids or diuretics may potentiate a possible hypokalaemic effect of beta₂-agonists. Hypokalaemia may increase the likelihood of arrhythmias in patients receiving digitalis glycosides. **Related to glycopyrronium:** Co-administration with other anticholinergic-containing medicinal products is not recommended. **Excipients:** Presence of ethanol may cause potential interaction in sensitive patients taking metronidazole or disulfiram. **Fertility, pregnancy and lactation:** Should only be used during pregnancy if the expected benefits outweigh the potential risks. Children born to mothers receiving substantial doses should be observed for adrenal suppression. Glucocorticoids and metabolites are excreted in human milk. It is unknown whether formoterol or glycopyrronium (including their metabolites) pass into human breast-milk but they have been detected in the milk of lactating animals. Anticholinergic agents like glycopyrronium could suppress lactation. A risk/benefit decision should be taken to discontinue therapy in the mother or discontinue breastfeeding. A decision must be made whether to discontinue breastfeeding or to discontinue/abstain from therapy. **Effects on driving and operating machinery:** None or negligible. **Side effects:** **Common:** pneumonia (in COPD patients), pharyngitis, oral candidiasis, urinary tract infection, nasopharyngitis, headache, dysphonia. **Uncommon:** influenza, oral fungal infection, oropharyngeal candidiasis, oesophageal candidiasis, sinusitis, rhinitis, gastroenteritis, vulvovaginal candidiasis, granulocytopenia, dermatitis allergic, hypokalaemia, hyperglycaemia, restlessness, tremor, dizziness, dysgeusia, hypoaesthesia, otosalginitis, atrial fibrillation, electrocardiogram QT prolonged, tachycardia, tachyarrhythmia, palpitations, hyperaemia, flushing, cough, productive cough, throat irritation, epistaxis, diarrhoea, dry mouth, dysphagia, nausea, dyspepsia, burning sensation of the lips, dental caries, rash, urticaria, pruritus, hyperhidrosis, muscle spasms, myalgia, pain in extremity, musculoskeletal chest pain, dysuria, urinary retention, fatigue, asthenia, C-reactive protein increased, platelet count increased, free fatty acids increased, blood insulin increased, blood ketone body increased, blood cortisol decreased. **Rare:** Lower respiratory tract infection (fungal), hypersensitivity reactions, including erythema, lips, face, eyes and pharyngeal oedema, decreased appetite, insomnia, hypersomnia, angina pectoris (stable and unstable), ventricular extrasystoles, nodal rhythm, sinus bradycardia, blood extravasation, hypertension, paradoxical bronchospasm, oropharyngeal pain, angioedema, nephritis, blood pressure increased, blood pressure decreased. **Very rare:** thrombocytopenia, adrenal suppression, glaucoma, cataract, dyspnoea, growth retardation, peripheral oedema, bone density decreased. **Unknown frequency:** psychomotor hyperactivity, sleep disorders, anxiety, depression, aggression, behavioural changes (Refer to SPC for full list of side effects). **Legal category:** POM Packs and price: £44.50 1x120 actuations. **Marketing authorisation No.:** EU/1/17/1208/002 **UK Distributor:** Chiesi Limited, 333 Styal Road, Manchester, M22 5LG. **Date of preparation:** Jun 2017. AeroChamber Plus® is a registered trademark of Trudell Medical International.

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



Primary Care Respiratory Update

Continued from page 32

The following recommendations are not respiratory-specific, but are relevant to respiratory care, and focus on providing an alternative to hospital care:

- o Provide nurse-led support in the community for people at increased risk of hospital admission or readmission.
- o Provide multidisciplinary intermediate care as an alternative to hospital care to prevent admission and promote earlier discharge
- o Provide a multidisciplinary community-based rehabilitation service for people who have had a medical emergency.
- o Provide specialist multidisciplinary community-based palliative care as an option for people in the terminal phase of an illness.
- o Offer advance care planning to people in the community and in hospital who are approaching the end of life and are at risk of a medical emergency.

It may be useful for our members working on or considering service development or improvement initiatives to refer to these, and relevant too for relieving the impact of winter pressures, where respiratory is increasingly recognised to be a significant contributor.

Update on national COPD and asthma audit programme

We have now seen two primary care reports for the COPD audit, which can be found on the RCP website. These have highlighted significant issues with accurate diagnosis of COPD and huge variations in coding. Underuse of many high value interventions also suggests that many patients are not getting the care they need. Lack of or poor coding of key data may be preventing clinicians from tailoring treatment to individual patients' needs.

Now that the audit has been expanded to encompass asthma, RCP has done a lot of work to identify the right data to collect from practices on asthma care. Data will be extracted over winter 2018/19 and the first joint asthma/COPD primary care audit report will be published in July 2019.

As data collection is only possible from primary care in Wales at present, work is ongoing to extend the audit into England and Scotland in the future.

Journal Round-Up

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

** Editor's Choice **

“Tossing a coin:” defining the excessive use of short-acting beta2-agonists in asthma – the views of general practitioners and asthma experts in primary and secondary care

Shauna McKibben, Andy Bush, Mike Thomas, et al.
NPJ Prim Care Respir Med 2018;28:26
doi: 10.1038/s41533-018-0096-4

The majority of UK asthma deaths are potentially preventable, a point made most recently in the National Review of Asthma Deaths (NRAD) ‘Why asthma still kills’, which identified high prescribing of short-acting beta2-agonists (SABAs) as a contributing factor in over 40% of asthma deaths. NRAD recommended that prescribing more than one SABA per month should trigger an asthma review. Mortality and morbidity have been found to rise progressively with increasing numbers of SABAs dispensed per year, and the risk of hospital admissions is associated with the prescription of more than three SABAs per year.

McKibben and colleagues set out to identify how SABA overuse is defined and perceived by general practitioners (8), asthma experts in general practice (8) and asthma experts in hospital-based care (5).

They discovered disparity in how acceptable SABA use is defined (ranging from 100 to 2,400 doses per year), and complacency in overuse being a marker for risk of asthma death. Some experts questioned the risk of morbidity and mortality with high SABA use, and were of the opinion that factors including low inhaled corticosteroid use and markers of asthma attacks such as oral steroid use, hospital admissions and emergency department attendances were necessary to prompt clinical intervention. Asthma guidance was perceived not to reflect the real world, and to range from ‘silly’ to ‘stringent’.

They concluded that a more nuanced approach to managing those at risk of asthma attack is required, that there was shocking complacency about SABA overuse and that it will be difficult to reduce the number of asthma deaths unless attitudes are challenged and changed.

Clinical characteristics of patients newly diagnosed with COPD by the fixed ratio and lower limit of normal criteria: a cross-sectional analysis of the TargetCOPD trial

Martin R Miller, Shamil Haroon, Rachel E Jordan, et al.
Int J Chron Obstruct Pulmon Dis 2018;13:1979–86
doi: 10.2147/COPD.S146914

Although COPD is the third leading cause of premature mortality, its definition remains in a state of controversy due to the criteria for defining airflow obstruction. GOLD and the National Institute for Health and Care Excellence (NICE) apply the fixed ratio (FR) of FEV1 to FVC of <70% as indicative of airflow obstruction, but this definition takes into account neither age, ethnicity nor gender.

The aim of this study was to compare the clinical characteristics of symptomatic patients in primary care with case-found COPD diagnosed when using the FR criterion with those identified when using the lower limit of normal (LLN; below the fifth percentile adjusted for age, gender, height and ethnic group).

The study consisted of a post-hoc cross-sectional analysis of data from TargetCOPD, which was a cluster-randomised controlled trial based in primary care that compared two approaches to COPD case finding against usual care. Those of the 32,811 case-finding arm of the TargetCOPD trial who responded to a questionnaire and attended a spirometry assessment (n=2,607) were analysed for demographic characteristics, smoking status, symptoms, self-reported co-morbidities and quality of life.

The conclusion of the study was that the use of FR for defining airflow obstruction may lead to the inclusion of a significant number of older people with breathlessness as having COPD, who may instead have age-related changes in lung function in the presence of cardiovascular disease as the cause for their symptoms.

A pragmatic trial of e-cigarettes, incentives, and drugs for smoking cessation

Scott D Halpern, Michael O Harhay, Kathryn Saulsgiver, et al.
N Engl J Med 2018;378:2302–10.
doi: 10.1056/NEJMsa1715757

Smoking is the leading cause of preventable illness and death. Companies in the US offer employees smoking cessation programmes to alleviate the cost associated with smoking. Understanding the most effective intervention for smoking cessation can guide companies on how to support smoking cessation with their employees.

This pragmatic trial of smoking cessation aimed to explore the effectiveness of five smoking cessation interventions. These interventions included usual, free cessation aids (including nicotine replacement therapy or pharmacotherapy, or access to free e-cigarettes if these therapies failed), free e-cigarettes, free cessation aids plus a \$600 reward or free cessation aids plus \$600 in redeemable funds, provided as a deposit with money removed if cessation milestones were not met.

The results showed that the \$600 incentive group demonstrated the highest sustained abstinence rate at six months (2.9%), with the reward group coming a close second (2.0%). Usual care, free cessation aids and free e-cigarettes produced sustained abstinence rates of 0.1%, 0.5% and 1.0%, respectively.

The researchers concluded that financial incentives, when used in combination with free cessation aids, were the most effective smoking cessation intervention. Although these results are compelling, it is important to remember that interventions used in each group were not distinct from each other. Therefore, it may be hard to draw clear conclusions about the most effective method of smoking cessation based on these results.

Tobacco smoke exposure in early life and adolescence in relation to lung function

Jesse D Thacher, Erica S Schultz, Jenny Hallberg, et al.
Eur Respir J 2018;51:1702111.
doi: 10.1183/13993003.02111-2017

As is well-known, maternal smoking during pregnancy is associated with undesirable health outcomes in the offspring. Less is known, however, about the long-term effects this may have on lung function, as well as related effects of second-hand smoke (SHS) exposure and adolescent smoking.

Dr Thacher and colleagues explored data collected in the BAMSE (Barn/Child, Allergy, Milieu, Stockholm, Epidemiology) study to understand the effects of maternal smoking during pregnancy, SHS exposure during infancy or at 16 years, and adolescent smoking on lung function at 16 years.

The results showed that maternal smoking during pregnancy and adolescent smoking were associated with lower forced expiratory volume in 1 second (FEV1)/forced vital capacity (FVC) ratios and increased peripheral airway resistances at 16 years. Such associations were not found in either SHS cohort. Although no significant interaction was observed between maternal smoking during pregnancy and adolescent smoking, those who were exposed to both demonstrated a more greatly reduced FEV1/FVC ratio of –2.5%.

The conclusions highlighted that exposure to maternal smoking during pregnancy had significant associations with reduced lung function at 16 years. This suggests that perinatal exposure to tobacco smoke has a long-term effect on lung function that can persist until adolescence. In addition, the presence of reduced lung function in adolescent smokers highlights the short duration required for significant effects to appear.

Trends in asthma self-management skills and inhaled corticosteroid use during pregnancy and postpartum from 2004 to 2017

Annelies L Robijn, Megan E Jensen, Peter G Gibson, et al.
J Asthma 2018;2:1–9
doi: 10.1080/02770903.2018.1471709

Effective disease management is important in the care of pregnant asthmatic patients to reduce the number of asthma exacerbations and use of oral corticosteroids. The researchers compared the self-management skills and inhaled corticosteroid (ICS) non-adherence rates in three cohorts of asthmatic pregnant women between 2004 and 2017. They also explored the number of educational sessions required to achieve maximum improvement in these skills.

Three prospective studies in pregnant women with asthma: 2004 (2004–2006), 2007 (2007–2009) and 2013 (2013–2017) were used to compare medication use, adherence, knowledge and inhaler technique between each cohort, and to explore the effects of patient education on self-management skills.

The results demonstrated that self-management skills in these participants did not improve between 2004 and 2017, with 41%, 29% and 38% of the 2004, 2007 and 2013 cohorts using ICS therapy, respectively. Medication knowledge increased significantly after two sessions for controller medication and three sessions for reliever medication, and correct inhaler technique was achieved and ICS adherence was improved after just one session.

The researchers concluded that high prevalence of non-adherence and poor self-management existed in all cohorts; however, such factors can be improved after education.

High prevalence of bronchiectasis in emphysema-predominant COPD patients

Shuang Dou, Chunyan Zheng, Liwei Cui, et al.
Int J Chron Obstruct Pulmon Dis 2018;13:2041–7
 doi: 10.2147/COPD.S163243

The 2017 update of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) has emphasised the impact that bronchiectasis has on the course and prognosis of chronic obstructive pulmonary disease (COPD). Studies on co-existing COPD and bronchiectasis have focused on the influence of co-existing diseases on acute exacerbation frequency, severity of airflow limitation, prognosis and the characteristics of pathogenic microorganisms. However, little is known about the relationship between bronchiectasis and different phenotypes of COPD subjects. Should bronchiectasis, like emphysema and chronic bronchitis, be considered a phenotype of COPD?

In this retrospective study of 1,739 COPD patients, the prevalence of bronchiectasis in different phenotypes of COPD subjects and the correlation between bronchiectasis and different phenotypes, especially emphysema, were investigated.

The COPD patients were divided into two groups: those with bronchiectasis (n=140) and those without (n=1,599). Those with both COPD and bronchiectasis had worse states of nutrition, more severe airway obstruction and more extensive emphysema than patients without bronchiectasis.

Comparing emphysema-predominant and non-emphysema-predominant groups, the former had a higher proportion of bronchiectasis, higher emphysema index (EI) and more severe airway limitations.

This study represented the first time that EI was used to explore the correlation between bronchiectasis and different phenotypes in COPD patients. The study's comparison of COPD patients with and without bronchiectasis implies that exploring the mechanisms of co-existing COPD and bronchiectasis may help clinicians to better understand the pathology and pathophysiology of COPD.

Can CAPTURE be used to identify undiagnosed patients with mild-to-moderate COPD likely to benefit from treatment?

Nancy K Leidy, Fernando J Martinez, Karen G Malley, et al.
Int J Chron Obstruct Pulmon Dis 2018;13:1901–12
 doi: 10.2147/COPD.S152226

COPD Assessment in Primary Care to Identify Undiagnosed Respiratory Disease and Exacerbation Risk (CAPTURE) was developed to identify people with severe, high-risk, undiagnosed COPD in primary care settings (ie, people with FEV1 <60% predicted or exacerbation risk).

Although screening of asymptomatic individuals for undiagnosed COPD is not recommended, it is conceivable that identifying symptomatic patients with mild-to-moderate airflow limitation could be advantageous.

The authors of this US study set out to learn if CAPTURE could identify patients with FEV1 60–80%. To do this, analyses were performed on data from the original CAPTURE control group (n=160), with cases defined by a diagnosis of COPD, FEV1 ≥60% predicted and no exacerbation in the prior 12 months (n=73) and those with no COPD serving as control (n=87). The entire dataset (n=346) was used to evaluate CAPTURE across the full range of COPD (n=259), with patients without COPD (n=87) serving as control.

Results of the analyses suggest that CAPTURE can be used to identify symptomatic patients likely to have airflow limitation and in need of further clinical evaluation for possible COPD.

Further testing in a large prospective study of this case-finding approach and its effects on diagnosis, treatment and patient-centred outcomes are warranted.

Understanding patients' perceptions of asthma control: a qualitative study

Natalie Bidad, Neil Barnes, Chris Griffiths, et al.
Eur Respir J 2018;51:1701346
 doi: 10.1183/13993003.01346-2017

Optimal asthma control consists of preventing symptoms, minimising attacks, enabling ordinary levels of physical activity and achieving near-normal lung function, while also minimising adverse effects from medication. However, patients' perceptions of well-controlled asthma often differ considerably from those of healthcare professionals, with few patients considering their asthma 'uncontrolled' even while experiencing significant morbidity.

In this study, quantitative interviews were conducted with 42 patients recruited from a primary care asthma clinic and a hospital asthma outpatient clinic. Participants fell into two groups regarding their views on preventer medication. The smaller group acknowledged the importance of taking medication in the absence of symptoms. However, the majority of patients used this medication to treat symptoms only when they exceeded their personally defined tolerance threshold. Some patients also believed that preventer medication should only be used to prevent an exacerbation occurring when they started experiencing worsening of symptoms.

Concerns about adverse effects of medication – potential or actual – were common. This was particularly true of corticosteroids, which were perceived as much more dangerous than short-acting bronchodilators. Patients were also concerned

that taking medication frequently or for prolonged periods meant it would be less effective in an attack.

Finally, asthma reviews were considered a 'waste of time' and a bureaucratic step necessary only to obtain another prescription. However, contradictorily, patients felt that healthcare professionals focused too heavily on pharmacological treatment in asthma management discussions.

Association of electronic cigarette use with smoking habits, demographic factors, and respiratory symptoms

Linnea Hedman, Helena Backman, Caroline Stridsman, et al.
JAMA Network Open 2018;1:e180789
doi:10.1001/jamanetworkopen.2018.0789

Although electronic cigarettes (e-cigarettes) are becoming an increasingly popular smoking cessation aid, data regarding their long-term impact on health and their role in smoking cessation are lacking.

In this randomised cross-sectional study, researchers explored e-cigarette use in Sweden and associated smoking habits to understand what role they play in smoking cessation. They conducted postal questionnaire surveys in random population samples across North and West Sweden.

Of the 30,272 respondents, 12.3% were classified as current smokers, 24.4% were former smokers (ie, stopped smoking for >1 year), 63.3% were classified as never smokers and 2.0% were identified as e-cigarette users. Dual users were the most common, with 9.8% of current smokers being classified as e-cigarette users compared with only 1.1% of former smokers and 0.6% of never smokers.

This high prevalence of dual use suggested that e-cigarettes in Sweden were not currently encouraging smoking cessation. However, it is important to note that former smokers were only classified as such if they had stopped smoking for >1 year. As a result, some patients may have been misclassified as current smokers, potentially impacting the number of dual users recorded in this study. More research is therefore required to understand the role of e-cigarettes as smoking cessation aids before further conclusions are made.

A review of asthma care in 50 general practices in Bedfordshire, United Kingdom

Mark Levy, Fiona Garnett, Adedayo Kuku, et al.
NPJ Prim Care Respir Med 2018;28:29
doi:10.1038/s41533-018-0093-7

The National Review of Asthma Deaths (NRAD), published in 2014, highlighted that 90% of asthma-related deaths occurring between 2012 and 2013 were associated with poor asthma management in healthcare. This included, but was not limited to, failure to recognise asthma risk, over-prescription

of short-acting beta2-agonists (SABAs) and insufficient prescription of inhaled corticosteroid (ICS) preventer inhalers.

Based on this, the Bedfordshire CCG initiated a quality asthma audit across 50 practices in Bedfordshire between 2015 and 2016. The results demonstrated a broad variation in the care provided between these practices, including marked variation in the number of patients being provided personal action plans (ranging from 0% of patients in some practices to 98% of patients in others). Excessive prescriptions of SABAs were also recorded, with 1 in 20 patients being prescribed more than 12 SABA inhalers in the previous year.

In conducting this audit, researchers identified difficulties in gathering the information required to document patients at risk using the current systems in place. Conclusions highlighted that modifications are required to these systems to ensure patients are effectively managed and the risk of an asthma attack or related death is reduced.

Serotonergic antidepressant use and morbidity and mortality among older adults with COPD

Nicholas Vozoris, Xuesong Wang, Peter Austin, et al.
Eur Respir J 2018;52:1800475
doi:10.1183/13993003.00475-2018

Psychiatric disorders are common in patients affected by chronic obstructive pulmonary disease (COPD), with depression and anxiety being documented in 70–80% of COPD patients. Selective serotonin reuptake inhibitors (SSRIs) and serotonin-noradrenaline reuptake inhibitors (SNRIs) are recommended as first-line pharmacotherapy for these psychiatric disorders, with some theorising that these therapies may indirectly improve respiratory health outcomes in COPD.

In this population-based retrospective cohort study, researchers investigated the relationship between SSRI/SNRI use and respiratory morbidity and mortality in COPD patients aged ≥66 years.

Compared with non-users, new users of SSRIs and SNRIs demonstrated modest but significantly higher rates of respiratory-related morbidity and mortality, with results demonstrating higher rates of hospitalisation, emergency department visits and mortality related to COPD and pneumonia.

The authors suggested that SSRIs and SNRIs may have deleterious effects on the respiratory system, which would explain the higher rates of morbidity and mortality recorded in those using SSRIs and SNRIs. Although compelling, it is important to remember that these data only represent a relationship between these factors, not cause and effect. Therefore, more research is required to understand the full relationship between psychiatric therapy use and respiratory-related morbidity and mortality in older COPD patients.

The impact of acute air pollution fluctuations on bronchiectasis pulmonary exacerbation: a case-crossover analysis

Pieter Goeminne, Bianca Cox, Simon Finch, et al.
Eur Respir J 2018;52:1702557
doi:10.1183/13993003.02557-2017

The exact causes of pulmonary exacerbation in patients with bronchiectasis currently remain unknown. Although assumed to be primarily the result of a bacterial or viral infection, current antibiotic therapies used to treat these occurrences only have modest effects on patient outcomes. To ensure these patients are effectively managed, further understanding of the causes behind these exacerbations is required.

In this study the researchers aimed to understand the relationship between acute pollution fluctuations and the risk of pulmonary exacerbations in patients with confirmed bronchiectasis.

The results demonstrated that each 10 µg/m³ increase in PM10 and NO₂ concentration produced a 4.5% and 3.2% increase in the risk of having a pulmonary exacerbation that same day. In addition, they showed that the relative risk of pulmonary exacerbations in patients with bronchiectasis was significantly higher during spring and summer, when pollution exposure was at its highest.

The researchers concluded that air pollution fluctuations were significantly associated with increased exacerbation risk in bronchiectasis, and that research is required into a potential causal link between these two factors to understand this relationship further.

Long-term triple therapy de-escalation to indacaterol/glycopyrronium in patients with chronic obstructive pulmonary disease (SUNSET): a randomized, double-blind, triple-dummy clinical trial

Kenneth Chapman, John Hurst, Stefan-Marian Frent, et al.
Am J Respir Crit Care Med 2018;198:329–39
doi: 10.1164/rccm.201803-0405OC

Many patients with COPD receiving triple therapy (ie, a long-acting beta₂-agonist (LABA) plus a long-acting muscarinic antagonist (LAMA) plus an inhaled corticosteroid (ICS)) are not frequent exacerbators. There are no randomised controlled trials investigating ICS withdrawal in these patients.

This 26-week, randomised, double-blind, triple-dummy study in non-frequently exacerbating patients with moderate-to-severe COPD was the first to evaluate the safety and efficacy of the direct de-escalation of ICS from long-term triple therapy (tiotropium plus salmeterol/fluticasone) to the once-daily LABA/LAMA combination of indacaterol/glycopyrronium. The primary endpoint was non-inferiority on change from baseline

to trough FEV₁; moderate or severe exacerbations were pre-defined secondary endpoints.

The direct change to the dual bronchodilator indacaterol/glycopyrronium led to a small decrease in lung function, with no difference in COPD exacerbations. In patients with ≥300 blood eosinophils/µL there was a greater decline in lung function and increased exacerbation risk, and these patients would be more likely to benefit from continued triple therapy. For most patients, there was no impact on lung function or exacerbations.

This study provides evidence for the personalised management of patients with COPD.

Applying UK real-world primary care data to predict asthma attacks in 3776 well-characterised children: a retrospective cohort study

Steve Turner, Clare Murray, Mike Thomas, et al.
NPJ Prim Care Respir Med 2018;28:28
doi: 10.1038/s41533-018-0095-5

One million children in the UK have asthma, and asthma attacks are very common, affecting 50% of these children every year. Attacks result in morbidity and mortality, and are disruptive to the child and to their parents' economic activity. As at least one-third of healthcare expenditure on childhood asthma is spent managing asthma attacks; preventing these attacks is a priority. It is therefore surprising that there have been no studies in the UK that describe the risk factors for future asthma attacks.

This retrospective cohort study used a large (n=3,776) dataset of routinely acquired real-world patient information to address the question: 'What factors available in primary care practice can be used to predict asthma attacks in children aged 5–12 years?'

Variables included oral corticosteroid treatment for a previous attack, current control, severity, age, sex, obesity, peak flow and blood eosinophilia. The mean age was 9.0 years and 57% were male.

Of all the outcomes collected in the study, a previous asthma attack (and especially two attacks) was the best predictor of children who might benefit from intervention aimed at reducing their risk of future asthma attacks. Blood eosinophilia, reduced peak expiratory flow, lower respiratory tract infection and younger age were also associated with increased risk, but only weakly. Guidelines recommend that the review held in primary care within two working days of discharge from hospital includes checking inhaler technique, as well as re-examining the asthma action plan. The authors of this study suggest that further research is needed to determine if an early review after an asthma attack could reduce future asthma attacks.

Cost-effectiveness of roflumilast as an add-on to triple inhaled therapy versus triple inhaled therapy in patients with severe and very severe COPD associated with chronic bronchitis in the UK

Chris Kiff, Sandrine Ruiz, Nebibe Varol, et al.

Int J Chron Obstruct Pulmon Dis 2018;13:2707–20

doi: 10.2147/COPD.S167730

Patients with chronic obstructive pulmonary disease (COPD) are prone to disease exacerbations, which can have significant impact on their health. Patients with COPD are commonly treated with triple inhaled therapy, which consists of inhaled corticosteroids (ICS), long-acting beta2 agonists (LABAs) and long-acting muscarinic antagonists (LAMAs). However, exacerbations can persist despite treatment. Roflumilast is a phosphodiesterase type 4 inhibitor that can be added to triple inhaled therapy to further reduce the risk of exacerbation.

In this study, researchers assessed the lifetime costs, outcomes and cost-effectiveness of adding roflumilast to triple inhaled therapy (triple inhaled therapy + roflumilast) in patients with severe and very severe COPD (defined as forced expiratory volume in 1 s (FEV1) <50%). The primary endpoint was the reduction in the rate of moderate to severe COPD exacerbations. In addition to those with severe to very severe COPD, patients included had chronic bronchitis and were documented to have at least two moderate or severe exacerbations in the past year. Data were collected from previous roflumilast trials, REACT and RE2SPOND.

The results showed a non-significant reduction in the rate of moderate or severe exacerbations in patients treated with the triple inhaled therapy + roflumilast compared with those treated with triple inhaled therapy alone. Based on the calculated costs, the triple inhaled therapy + roflumilast group demonstrated an additional 0.14 quality-adjusted life-years (QALYs) at an incremental cost of £3,508, generating a deterministic incremental cost-effectiveness ratio of £24,976.

The researchers concluded that, compared with triple inhaled therapy alone, roflumilast is a cost-effective add-on treatment in patients with severe to very severe COPD, chronic bronchitis and a history of exacerbations. Based on these findings, the NICE updated its guidance to now recommend the use of roflumilast as an add-on to triple inhaled therapy for patients with severe COPD and a history of ≥ 2 exacerbations in the previous year despite previous treatment.

This study was funded by AstraZeneca UK Ltd.

Adverse outcomes from initiation of systemic corticosteroids for asthma: long-term observational study

David Price, Frank Trudo, Jaco Voorham, et al.

J Asthma Allergy 2018;11:193–204

doi:10.2147/JAA.S176026

Patients with respiratory conditions are commonly prescribed systemic corticosteroids (SCS), which are also used to treat or reduce the risk of flare-ups of inflammatory conditions such as rheumatological and autoimmune diseases, allergic reactions and inflammatory bowel disease. Their maintenance use raises concerns regarding increased risk of infections and cardiovascular events, type 2 diabetes mellitus, osteoporosis, cataracts, weight gain, insomnia, depression and behavioural disturbances. Even short-term use of oral corticosteroids (OCS) is associated with increased rates of sepsis, thromboembolism and fracture within 30 days of OCS initiation.

SCS are a mainstay of treatment for asthma exacerbations, and are often prescribed as part of a daily maintenance therapy for patients with severe asthma. In this long-term observational study of a broad population of patients with active asthma of all levels of severity, Price and colleagues set out to investigate the impact of initiating SCS (and of SCS exposure) on known SCS-associated adverse outcomes. Using anonymised longitudinal medical record data, the historical matched cohort study of patients with active asthma (n=307,213) compared those initiating SCS with those not exposed to SCS, and comprised a minimum one-year baseline period and a minimum two-year follow-up period. Patients were at least 18 years of age with no less than three years of continuous practice records.

The study findings in a broad asthma population initiating SCS, including both acute and maintenance SCS, and followed over a median exposure period of more than seven years indicate that increasing cumulative exposure and increasing mean daily exposure to SCS places patients at a high risk of potentially life-changing SCS-related adverse outcomes, which have a substantial financial impact on the health system. This finding is both statistically and clinically important, as increased risks of adverse outcomes were seen at relatively low cumulative and mean daily SCS exposures.

An important practical implication of this finding is that patients should be evaluated and considered for alternative treatment strategies in the course of their asthma to avoid the need for OCS.

This study was funded by AstraZeneca.

Temporal transitions in COPD severity stages within the GOLD 2017 classification system

Joan Soriano, Michael Hahsler, Cecilia Soriano, et al.
Respir Med 2018;142:81–5
doi:10.1016/j.rmed.2018.07.019

The diagnosis and staging of chronic obstructive pulmonary disease (COPD) is controversial. At the end of 2016 the Global Initiative for Chronic Obstructive Lung Disease (GOLD) modified its global COPD severity staging recommendations to be based on symptoms and history of exacerbations exclusively, and not including forced expiratory volume in 1 s (FEV1). However, the stability of the new staging is unknown, as is the frequency of the individual transitions in COPD severity beyond one year.

The objective of this study was to determine the longer-term distribution (longer than one year and up to five years) of the GOLD COPD stage transitions.

Soriano and colleagues analysed data from the CHAIN study, a multicentre, observational, prospective cohort of COPD patients. They investigated 959 COPD patients with a mean age of 66.3 years, of whom 19% were female and 33.3% were smokers. At baseline their severity was distributed (according to GOLD criteria) as 37.7% A, 38.3% B, 8.2% C and 15.7% D. Participants were followed up over the five-year study period, with clinic visits every 12 months and telephone interviews every six months. The recruitment period ran from January 2010 to March 2012. A Markov chain model was created and analysed, in which the probability of an event is dependent solely on the state attained in the previous event.

Although its novelty, size and length of follow-up represented study strengths, the investigators noted its limitations. As an observational non-interventional study, there were determinants that may have had a role in the observed stage transitions (eg, smoking cessation and adherence/variability in COPD pharmacotherapy). Also, over the course of five years the cohort size had shrunk to 388 patients (38.2% of baseline).

The authors observed that, although the proportions of all stages remained largely stable in the overall population after baseline assessment (from A being the most frequent, to B, D and then C as the least frequent), there were significant changes between stages at the individual patient level, especially for the more severe stages, up to five years of follow-up.

The CHAIN study was funded by AstraZeneca Spain S.A.

Clinical characteristics and medication patterns in patients with COPD prior to initiation of triple therapy with ICS/LAMA/LABA: a retrospective study

Michael Bogart, Richard H Stanford, Tyler Reinsch, et al.
Respir Med 2018;142:73–80
doi:10.1016/j.rmed.2018.07.009

Long-acting bronchodilation with a long-acting muscarinic antagonist (LAMA), long-acting beta2 agonist (LABA) or combination of the two is the foundation of COPD pharmacological treatment. For some patients, however, this is not enough, and symptom burden or risk of exacerbation drive the escalation to multiple bronchodilators plus an inhaled corticosteroid (ICS). Triple therapy with ICS/LAMA/LABA is currently recommended for patients taking bronchodilator therapy with persistent symptoms or who are at high risk for future exacerbations.

This retrospective study identified patients with a diagnosis of COPD from a US health insurance database between January 2014 and March 2016. The 'index date' was the first appearance in the patient's record of a dispensing overlap of the three drug classes (ICS, LABA and LAMA), which completed the triple therapy combination. A total of 69,743 patients were initially identified; after applying inclusion and exclusion criteria, 13,701 patients were considered first-time users of triple therapy and their records further examined.

Nearly all patients (95.7%) initiated triple therapy using a LAMA and a fixed-dose ICS/LABA inhaler. The number of patients with prescriptions for one or two medication classes increased in the time period leading up to the index date.

More than half the patients (59.8%) had at least one moderate or severe exacerbation during the study period, and 6.4% had a severe exacerbation. Only 9.6% of patients initiated triple therapy as their first treatment (ie, without having been treated with an ICS, LABA or LAMA) or experienced an exacerbation during the baseline period.

In conclusion, the results of this study indicate that most patients receiving triple therapy did so after prior treatment with at least one maintenance medication or after a moderate or severe exacerbation, in line with current treatment guidelines. Limitations in the study data do not permit further analysis of the 9.6% who started immediately on triple therapy, but the authors postulate this could have been due to persistent patient-reported symptoms, mild exacerbations or spirometry findings.

This study was funded by GlaxoSmithKline.

Exercise-induced bronchoconstriction: prevalence, pathophysiology, patient impact, diagnosis and management

Bhumika Aggarwal, Aruni Mulgirigama, Norbert Berend
npj Prim Care Respir Med 2018;28:31
doi:10.1038/s41533-018-0098-2

Exercise-induced bronchoconstriction (EIB) was previously known as exercise-induced asthma or exercise-induced bronchospasm before being named EIB in 1970. It is defined as acute, transient, reversible airway narrowing, occurring during or soon after exercise. Most cases occur in patients with asthma, but EIB has also been experienced by individuals without asthma, including some elite athletes.

EIB is estimated to occur in approximately 90% of people with asthma, and is more likely to manifest in patients with poorly controlled asthma. The prevalence in the general population is estimated at 5–20%, but few population studies differentiate between patients with asthma and those without. The prevalence in children is generally higher, at 3–35%, and those living in urban environments are 1.6 times more likely to experience EIB than those in more rural areas. High-performance athletes are also at increased risk due to prolonged inhalation of cold

dry air and airborne pollutants. Among elite or Olympic-level athletes, the prevalence of EIB has been estimated at 30–70%.

Present theories suggest that hyperventilation during exercise leads to water loss via evaporation, dehydrating the airway surfaces and initiating the mast cell-mediated signalling cascade, which results in the contraction of bronchial smooth muscle. Breathing cold air further increases the dehydration effect, and therefore athletes performing in cold weather conditions demonstrate the highest rates of EIB.

Unless well managed, EIB can limit patients' ability to exercise, depriving them of the well-known health benefits of regular exercise. In patients without asthma, non-pharmacological treatments for EIB include pre-warming and humidifying air during exercise (eg, by breathing through a face mask) and utilising a warm-up period. If symptoms continue, use of short-acting beta-agonists, leukotriene receptor antagonists or cromones should be considered. In patients with asthma, EIB may indicate poor asthma control and therefore attention should be focused on optimising asthma management.

PCRS-UK News Round-Up

HOW DO YOU LIKE OUR NEW BRANDING?

A new logo and a more contemporary look for the society was launched at the PCRS National Respiratory Conference in September. Speaking about the new look, Dr Noel Baxter, PCRS executive chair said: "We hope our members will agree the new logo does a great job of expressing respiratory care via the new lung graphic whilst the person graphic at the centre provides a stronger human touch, conveying the real strength of PCRS in connecting people as part of a dedicated community of practice."

"The PCRS blue, an integral part of our heritage since the society was formed over 30 years ago, has been retained whilst the other colours have been updated to work more effectively in the digital media and to provide a fresh and contemporary look."

"Whilst 'Primary Care Respiratory Society UK (PCRS-UK)' remains the legal name of the society, we have dropped the UK suffix from the logo and our marketing because it is clear that the vast majority of people think about us, talk about us, and search for us on Google as PCRS."

The new look is the first step of a wider programme to improve the society's marketing impact through transforming its use of digital media.

PCRS BACKS COURSE WHICH WILL HELP RAISE SPIROMETRY STANDARDS

PCRS is delighted to endorse the Association of Respiratory Technology and Physiology (ARTP) spirometry course (<http://www.clinicalscience.org.uk/spirometry-course-synopsis/>) as appropriate for health professionals, having reviewed it and provided extensive input.

The primarily online course, endorsed by PCRS, is administered by the Institute of Clinical Science and Technology (ICST) on behalf of ARTP. For more information on what you need to do to join the National Spirometry Register, go to our spirometry web pages at <https://www.pcrs-uk.org/spirometry>

PCRS ENDORSES NEW INHALER VIDEOS

A series of instructional videos (<https://www.asthma.org.uk/inhalervideos>) on good inhaler technique has been launched by Asthma UK. Endorsed by the UK Inhaler Group, of which PCRS is a member, the videos have been created to address the variations in how inhaler technique is taught. Clinically accurate and developed with input from people with respiratory conditions, these are short, easy-to-watch tutorials showing how to best use the most commonly prescribed inhalers. The videos are designed to enable patients to check their technique any time, or for healthcare professionals to use in clinic.

What's your Room 101 top NHS waste pet hate?

The Room 101 session at the PCRS National Respiratory Conference touched such a raw nerve with delegates when they were asked what their top waste issue was that we have decided to extend our poll to the wider membership. Read what our delegates said (<https://www.pcrs-uk.org/news/whats-your-top-nhs-waste-pet-hate>) and share your waste bugbears via our online survey at <https://www.pcrs-uk.org/form/your-nhs-room-101>.

PCRS WELCOMES NEW CONFERENCE ORGANISING COMMITTEE MEMBERS

We've only just completed the 2018 conference but we're already making plans for the 2019 annual conference. Led by Anne Rodman and Katherine Hickman, the Conference Organising Committee is responsible for the development and delivery of the annual conference. The Conference Organising Committee aims to have a range of professional roles and experience to represent the membership, and we are delighted to welcome on board Claire Davidson, respiratory specialist physiotherapist from Nottingham, and Daryl Freeman, GP from Norwich, to the Conference Organising Committee this year.



Second Opinion

Your respiratory questions answered...

Question

I want to know more about FeNO and whether we should introduce it in our practice. Where can I find out more about it and how do I create a business case in support of its use?

Answer

FeNO is a test that measures eosinophilic inflammation in the airways. It is easy to perform and most people can carry out the manoeuvre from age 5 or 6 years. The test takes around two minutes with the result immediately available. FeNO can be used as a consideration for patients presenting for diagnosis of asthma and is particularly useful when the history makes diagnosis uncertain. It is also a useful tool in asthma management for patient education, opening dialogue about medication adherence, stepping down treatment and a consideration when symptoms are increasing. It is not a replacement for a good knowledge of asthma management and guidelines or clinical judgement.

Most departments will have a template to populate for a business case. There is little money within the NHS for investment in new services or even new technology. However, CCGs will, at times, offer funding for new initiatives that FeNO may fit into such as innovation funding, so it is worth being aware of what is available. An 'Invest to Save' case – showing the savings from getting the diagnosis right and not prescribing lifelong medications for those who do not have asthma – along with the improved quality for those who will benefit from better management, would make the most successful business case in the current economic climate.

Resources you may wish to refer to

- Slide Kit on FeNO presented by Carol Stonham at the PCRS National Conference 2018. <https://bit.ly/2Px3rfj>
- PCRS Wall Chart Guide to Respiratory Devices (<https://www.pcrs-uk.org/resource/guide-respiratory-devices>).
- Getting the basics right: FeNo (<https://www.pcrs-uk.org/resource/feno-testing>).
- PCRS response to the publication of the NICE guideline on the diagnosis and monitoring of asthma (https://www.pcrs-uk.org/sites/pcrs-uk.org/files/BriefingAsthmaGuidelines_V3.docx).
- NICE guide to the diagnosis of asthma (<https://www.nice.org.uk/guidance/NG80>).

Delivering Excellence Locally

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

Achieving national spirometry certification in primary and secondary care in wales: a systematic approach



Dr Simon Barry *Consultant Respiratory Physician University Hospital of Wales in Cardiff, and Lead, Respiratory Health Implementation Plan Wales*

Introduction

Respiratory disease is the cause of one in seven deaths and one in seven adults is being treated for a respiratory condition in Wales.¹ In 2014, the Minister for Health and Social Services, Professor Mark Drakeford AM, commissioned the Respiratory Health Delivery Plan with the key aims of:

- Preventing poor respiratory health
- Detecting respiratory disease early
- Delivering fast and effective care
- Improving information
- Promoting research

Each of the seven Health Boards in Wales put forward local plans addressing these themes, and representatives met to discuss the most important key issues. There was overwhelming agreement that improving the standards of spirometry was the most pressing need, with other priorities including smoking cessation, national prescribing guidelines for COPD and asthma and improving access to pulmonary rehabilitation. In 2016, in line with the other national delivery plans, £1 million was allocated annually by Welsh Government to help implement the Respiratory Delivery Plan.²

As a respiratory community we have come far over the past few years, particularly developing an infrastructure and culture based around good data extraction and tackling variation of respiratory services across Wales. This article describes one element of this – engaging spirometry practitioners across Wales with the Association for Respiratory Technology and Physiology (ARTP) spirometry certification process. It describes the key principles we applied when developing this programme and how these will drive further development of respiratory care and quality across Wales.

Background

In Wales there are around 84,000 patients on GP registers diagnosed with COPD. The Quality Outcomes Framework (QOF) data reported that more than 90% of patients had their diagnosis of COPD confirmed by post-bronchodilator spirometry, yet local audits performed in a series of practices in Cardiff and Vale suggested that this figure was incorrect. Wales was the first country to engage with the National COPD audit in primary care and, in 2014, 56% of practices across the country provided their data. The results confirmed our suspicions showing that only 14% of patients actually had spirometry results with a diagnostic code consistent with COPD. Even when the code was ignored, 32% had post-bronchodilator spirometry that was not compatible with COPD.³ A subsequent data upload (whilst using slightly different datasets from the first), in which 94% of all Welsh practices engaged with the audit, suggested little improvement.⁴ Therefore, up to 27,000 patients on COPD registers may not have that diagnosis and are on inappropriate treatment. However, this is not exclusively a problem in Wales, as practice level audits across the rest of the UK have shown similar results. It is also estimated that up to one third of asthmatics do not have the disease (approximately 73,000 out of 220,000 in Wales).⁵ Given that Wales spends over £85 million annually on inhaler therapy alone, that provides the clear evidence for focusing on improving diagnosis as a national strategy.

Spirometry training in Wales

In 2005, Bolton and colleagues determined by questionnaire the availability, staff training, use and the interpretation results of spirometry in 72% of general practices in Wales.⁶ Most practices had a spirometer (82.4%) and, of these, 85.6% used it. However,

confidence in the use of a spirometer and interpretation of the spirometry results varied widely. Only 58.1% were confident in its use and a third were confident in interpretation of the result. Despite incentives to perform spirometry, the lack of adequate and standardised training in performance and interpretation suggested that use in primary care is confounded and that the diagnosis of COPD is likely to be made on imprecise clinical grounds. A subsequent UK-wide survey found that only 20% of primary care nurses who always used spirometry to diagnose COPD had undertaken any form of formal accredited training.⁷

Therefore, the conclusion was that training in spirometry in Wales was poor, with no clear mechanism for improving it. Moreover, there was no standardisation of equipment, no protocols for spirometer calibration and quality assurance, and no means of validating the spirometry results. The Respiratory Health Implementation Group (RHIG) determined that addressing this issue involved the following key steps:

1. Standardisation of spirometry equipment and test result reports across Wales.
2. Validation of spirometry results by uploading them digitally to the national IT interface, the Welsh Clinical Portal (WCP).
3. Training of any practitioner performing or interpreting spirometry in Wales to the ARTP standard, with certification onto the National Register.

Spirometers were procured through a competitive tender, resulting in significant cost savings. The integration between primary care spirometry results and WCP is expected in early 2019. Implementing training for ARTP nationally was by far the most difficult task. Since there was no clearly defined model for delivering spirometry training, we initially devolved this responsibility to individual Health Boards. Monies were allocated from the national fund to deliver this at no cost to the Health Boards. Despite this, it became apparent that the General Practitioners Committee (GPC) Wales, general practitioners and practice managers were unhappy about releasing their staff for two days to complete the required training and requested funds to backfill their absences.

This stimulated Rhys Jefferies, the National Programme Manager, to work with ARTP to refine and simplify the certification process, reducing the attended teaching time from two days to an optional half-day workshop and simplifying the certification process without impacting on standards or the learning experience. The focus was on meeting learning outcomes through formative assessment using an engaging interface. What was being assessed was critiqued; especially why certain elements were being assessed and the mechanisms for how it was being assessed. This led to a reduction of around 50% in the work candidates needed to do, gaining the endorsement of GPC Wales who became supportive in rolling out the programme to primary care.

Developing an integrated spirometry education programme

The solutions for delivering spirometry training varied between different Health Boards, with some Health Boards electing to employ extra staff in secondary care physiology departments to deliver the training and others deferring this to local universities. Powys – the largest but also most sparsely populated – has no general hospital or any university within its boundary, meaning that a different model was required for training. Working with the Institute of Clinical Science & Technology (ICST), we developed a system-wide approach to up-skill candidates no matter where they may be in Wales – and offered an infrastructure to stimulate continuous learning and engagement.

The key features for the success of this alternative model, which could be rolled out nationally and serve both primary and secondary care irrespective of the demographics and local structures, involved addressing the following:

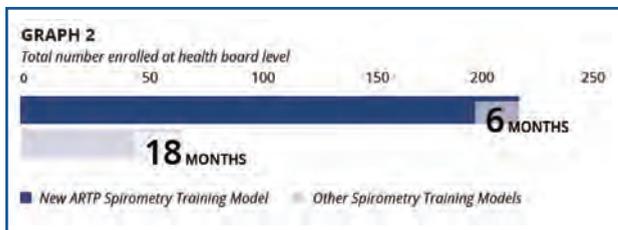
- Is it simple?
- Is it supported?
- Is it scalable?
- Is it practical?
- Is it demand orientated?
- Is it being implemented from within?
- Does it serve those implementing it?
- Does it add value?

From the pilot we established a delivery model that achieved each of these key principles. We eliminated the dependence on travel time and minimised absence from clinical duties. The flexible nature of the programme meant that it was not limited by the number of individuals enrolling, nor by the numbers already enrolled or by the availability of staff to deliver it. The academic element of training was delivered completely online and any face-to-face training was reserved for practical skills alone. Candidates now have an option to choose training that suits them, their commitments, expectations and learning requirements.

Powys was selected as the initial site for implementation and GP practices were contacted and staff enrolled onto the programme. Candidates underwent an integral on-boarding process, supported by the local manager, where teams were informed of the rationale and scope of the programme and helped to determine why the certification process was important to them, their service and their patients. Every practice in the region engaged with the programme and the numbers of practitioners that enrolled surpassed any other Health Board (graph 1). Feedback from those on the programme was excellent.



Following the success of the ICST delivery model in Powys, we implemented it in other Health Boards that had generally been unsuccessful in delivering spirometry using their in-house model. One Health Board that had failed to get 20 individuals through the programme was encouraged to adopt the ICST delivery model (Graph 2) at a third of the cost. Furthermore, the results showed over 10 times the number of candidates enrolled onto the programme, clearly achieving its demand-orientated objective. Furthermore, this was achieved in a third of the time taken for the traditional secondary care approach.



Delivering education at scale

Our approach in Wales is to deliver programmes at a national level – a focus on developing specific national training and education competencies, implementing national disease databases and ultimately delivering better value healthcare. We have several advantages in achieving this goal:

1. Wales is a small country with a population of 3.1 million
2. The seven Health Boards fund and support cooperative care between primary and secondary care
3. There is a single national IT interface which facilitates the implementation of databases and other IT solutions
4. The Respiratory Health Implementation Group is supported and funded by Welsh Government to improve respiratory care nationally.

It has become apparent through the natural experiment of implementing spirometry nationally that there is a huge variation in the cost and effectiveness of different solutions. This digital solution has proved to be superior because it addresses the key principles outlined above and it is measurable. Published data support such technologies as the preferred means for education in primary

care. A recent study examining the utilisation of internet resources in 383 GPs in Scotland found that 80.4% used e-learning for self-directed educational CPD.⁸ Furthermore, a study exploring teaching and learning for GPs found that the principal barriers to further study were work commitments, cost, family commitments and distance from course location. The study found that the preferred methods of learning were POD casts, DVD, webinar, apps, facilitated chat rooms and video conferencing, and this is a recurring theme following extensive interviews with practitioners across Wales.

We are now replicating this digitalisation process across a series of other national respiratory competencies including capillary blood gas testing, pleural procedures and asthma and COPD management. All national educational programmes, guidelines and registers are held within the same site. This has a dedicated internet TV channel, a clinical pathways app and a Quality Improvement platform. Data informs education, which subsequently changes practice through well-defined and specific quality improvement activity. These are available at no cost to healthcare workers in Wales and, since the development of this system, there has been a significant increase in engagement, standardisation and simplification of respiratory care.

Summary

Accurate spirometry is the foundation for the diagnosis of COPD, and it is clear from the National COPD Audit in Wales that up to a third of patients on COPD registers do not have post-bronchodilator obstructive spirometry. This indicates an incorrect diagnosis and wastage of significant sums of money on inappropriate inhaler therapy.

We describe a new model to deliver spirometry training at scale that is innovative, ongoing and measurable. It minimises time taken away from direct clinical duties, is cost effective and is of proven success when compared with other delivery models. It was developed in Wales through ICST in Cardiff and has now been adopted by NHS England as the primary mechanism for achieving ARTP spirometry certification at scale and is endorsed by the Primary Care Respiratory Society. This model of education, certification and registration is transferrable across a range of other competencies and will be used to up-skill the whole workforce in Wales to deliver value-based healthcare.

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PCRS Respiratory Clinical Leaders Programme Profile: Dayo Kuku



Fran Robinson talks to **Dr Dayo Kuku** on her experience of the PCRS Respiratory Leader Programme and how it has helped her deal with conflict, influence others and gain confidence in her professional role

When Dr Dayo Kuku, GP and Respiratory Clinical Lead at Bedfordshire CCG, took up a new respiratory leadership role, she knew she needed to resolve a conflict with a colleague. At the time she thought it was an unsurmountable challenge. But thanks to the PCRS Respiratory Clinical Leadership programme, she learned the tools and techniques that enabled her to resolve the personality clash.

“Normally I just avoid conflict, but I knew this time that I just couldn’t afford to do that. It was a very sensitive issue,” she recalls.

She clearly remembers the workshop where she gained an understanding of her leadership style through the colours personality test. She discovered her colour is blue, an analytical person who likes to be led by the facts. The colleague she clashed with was yellow, a sunny happy-go-lucky personality who tends to be loud and vocal. So they were opposites. Dayo came away with an insight into where both she and her colleague were coming from, which is now enabling her to listen to her and work with her in a much more positive way.

“Part of the leadership role is to see the other side of the argument and find a path through conflict and to resolve it. It was so eye-opening, I learned how to listen to my colleague and use that in a positive way. So rather than allowing myself to be irritated by her, I gained an understanding of what her strengths and weaknesses were and that I could complement them. We now work together very well.”

Dayo also learned the skills needed to influence and negotiate. “It was so powerful, I left the workshop empowered to deal with the challenge I was facing. I knew I had the leadership skills but I had to enhance them and use them in a way that is effective. I have learned that as a leader you have to be able to communi-

cate effectively and be able to offer support to people in the team when they need it. You have to be able to negotiate on several levels.”

“Being a leader is not only lonely, it is also a challenge,” says Dayo, but she realised she was not alone when she had the opportunity to network with colleagues facing similar challenges to her own. “The networking opportunities at the workshops give you the chance to talk to other people in the same field. They understand what you are going through and you can share your thoughts and ideas. Most importantly, the environment of the workshops enables you to feel free to be open and honest without fear that someone is going to run you down or share your story in a negative way.”

Dayo says the project management skills she has gained from the programme have helped her with projects ranging from developing an integrated COPD service for the CCG, working as a locality prescribing lead, being involved in decisions about drugs in the formulary and updating local respiratory guidelines. “It has helped me to be clear about exactly what I am trying to achieve with a project.”

A particularly challenging project was taking the lead for running a respiratory conference. She learned to encourage members of the team by giving praise and feedback and celebrating success. She managed to encourage one colleague who backed out of the first conference to return and flourish when she put on a second event. “Encouraging the team helps the success of a project and boosts your own confidence,” she says. She recognises that a problem she has is that she is a perfectionist and can get bogged down if she is not focused, so she has learned to stick to the project plan and monitor progress.

“I now feel more confident as a leader and am more reflective and have a greater understanding of the perspective and interests of others. I understand my leadership style and am able to use it more effectively. It’s important to keep attending the workshops because the day you stop learning, you stop being a leader,” says Dayo.

The next workshop is ‘Mobilise Support for your Idea – the Case for Change’ on 7–8 June 2019 at Hallmark Hotel Derby Midland. For further information visit <https://www.pcrs-uk.org/event/respiratory-leaders-meeting-june-2019>

Practical solutions for ensuring the long-term future of local affiliated groups



Fran Robinson reports on a recent annual networking event of PCRS affiliated group leaders held on 27 September 2018 led by PCRS Vice Chair Carol Stonham

PCRS local affiliated groups are continuing to thrive and develop, the annual meeting of group leaders heard. A number of groups are increasingly attracting members of the wider primary care multidisciplinary team and others welcome colleagues from secondary care, creating opportunities to network.

One group in North-East Essex set up a year ago reported they have excellent attendance from pharmacists, GPs, nurses, doctors and mental health nurses. In total they have 80 members and over 100 on Facebook.

Another group in Southampton, which started as a nurse group, has recently doubled and then tripled their numbers and is now attracting research nurses, GPs, pharmacists and occasionally colleagues from the ambulance services.

Keeping the momentum of a group going, however, can be a challenge with established leaders retiring, other leaders struggling to keep groups going single-handed and keeping numbers up when busy healthcare professionals lack time to attend meetings. Some leaders said many of their older regular members were coming up to retirement and they recognised that they needed to attract new younger members.

The meeting discussed some solutions for maintaining numbers. These included:

- Think carefully about the agenda to ensure it is attractive to members. Ask members what they want to see on the agenda. One leader said one of their most successful meetings included a talk by a paediatrician about the care of children with respiratory disease in the emergency department. Another recommended offering bite-size 10 minute training soundbites. The PCRS affiliated groups newsletter offers tips and suggestions for topics to discuss at meetings.
- Ask pharmaceutical companies to help with funding and relieving some of the workload. Ruth Thomas from Milton Keynes, who runs a well attended group, said: “We are funded and helped by six or seven pharmaceutical companies. They book the venue for me while I draw up the agenda and send out the email invitations and the certificates after the meeting. I don’t touch the money they provide. If you have several companies helping you, no one can say there is any bias from any one company. In return, the companies have a display stand at the meeting. The educational content remains independent.”
- Use the PCRS members’ directory to find colleagues with whom to discuss problems and find solutions
- Use your colleagues to bounce ideas off each other and give you valuable support
- Don’t do everything on your own. Set up an education committee that can provide you with help and back-up. Start by asking for help with small tasks like photocopying or managing the members’ list so the responsibility is not overwhelming. Over time, people will become more confident and are likely to take on more of the work that needs doing. Jackie Dale said: “Sometimes people don’t step up to help because they think the job will be too big and they won’t be able to cope. It is important to manage their expectations.”
- Encourage new people to come to meetings. Ask your CCG or practice manager if they have email distribution lists that will provide you with the addresses of all the practice nurses and other primary healthcare professionals in your area who may be interested in coming to meetings. Some of them may not know your group exists.

Carol Stonham, PCRS Vice Chair, suggested that a useful project for local groups could be to do an audit of the knowledge, skills and training of their members using the PCRS 'Fit to Care' document (https://www.pcrs-uk.org/sites/pcrs-uk.org/files/FitToCare_FINAL.pdf) and to send the results to PCRS to compile into

a report. The national picture of what's happening will make interesting reading.

"This is a valuable exercise to do and could highlight areas where people might need additional training. The document is quick and easy to read but is concise, detailed and well written," she said.

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

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

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

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

Affiliating your group to PCRS confers free PCRS membership for the group leader and the opportunity to attend group leader workshops.

We can:

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

To affiliate your group visit

<https://www.pcrs-uk.org/affiliation-pcrs-uk>



Affiliated Groups

Working together to make a real difference in respiratory care

Our network of around 50 affiliated groups across the UK help you to connect with healthcare professional involved in respiratory care in your area. If there isn't a group in your area appropriate to your needs, why not set one up?



PCRS is here to help you with

- **Support and resources** to help you get started and develop a new group.
- **An affiliation scheme** offering enhanced credibility and support for your group from a national network.
- **A regular newsletter**, packed with ideas to help support your group.
- **An annual meeting** for Group Leaders to support personal and collective respiratory development in your area.
- **Free PCRS membership** for leaders of an affiliated local group.

Find out about our affiliated groups by visiting
<https://pcrs-uk.org/affiliated-groups>

The Primary Care Respiratory Society is grateful to Pfizer Ltd for the provision of sponsorship through funding to support the activities of the Affiliated Group Leaders programme. The programme has been solely organised by PCRS.

PCRS Respiratory Conference

19-21 September 2019, Telford International Centre



The must attend multidisciplinary conference for professionals involved in respiratory care across primary, community and specialist settings anywhere in the UK

- A diverse programme focusing on a holistic approach to caring for people with respiratory disease through thought-provoking keynote plenary presentations, clinical and service development sessions, scientific research abstracts and practical workshops
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Find out more information by visiting
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Selection of Scientific and Best Practice Abstracts submitted to the PCRS National Respiratory Conference 2018

The following pages include a selection of some of the scientific and best practice abstracts presented at the 2018 PCRS National Primary Care Respiratory Conference.

Commentary on abstracts



Dr Iain Small, Editor PCRU

This year's conference saw a new generation of respiratory researchers present their work, supported by Academic Departments of Primary Care with strong links to PCRS. There were a series of excellent, practical and successful presentations around case-finding, diagnosis, clinical review and co-morbidities that provided evidence to support practical and 'do-able' actions and interventions (Abstracts 59, 84, 39, 83, 17).

I was particularly struck by the work looking at the impact of respiratory disease on mental health (and vice versa) (Abstracts 36 and 40) and working life (Abstracts 75 and 77).

It was refreshing to see these sessions so well attended, and I commend each abstract published here to our readers.



Alex Woodward, Respiratory Physiotherapist

It is well documented that many respiratory patients are either not referred to pulmonary rehabilitation or do not attend it. The abstracts on pulmonary rehabilitation provide some useful and practical information for primary care services to help with both of these situations. They highlight that a simple electronic GP record search for patients eligible for pulmonary rehabilitation can more than double the referral rate and reiterate the importance of incorporating pulmonary rehabilitation discussions into annual review templates. They show that not only does educating patients on what pulmonary rehabilitation is and the benefits of it improve uptake, but also that a well informed and knowledgeable referrer about pulmonary rehabilitation helps to increase uptake and referral numbers.

For primary care pulmonary rehabilitation providers, they raise awareness that many patients who attend pulmonary rehabilitation may have low health literacy so these patients may need extra support to enable them to complete the programme. They also show that a simple weekly follow-on primary care-based maintenance class after completing pulmonary rehabilitation may prolong the benefits gained, potentially reducing re-referral rates to help improve service capacity.



Andrew Whittamore

Along with Viv Marsh, I chaired a fantastic session of abstracts poster presentations at the conference. The underlying theme was that improved communication created better outcomes whether healthcare professional to patient, healthcare professional peer to peer or healthcare professional to commissioners. The standard was very high and we can all learn from these abstracts to improve what we do.

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Scientific Abstracts

Abstract Number: 83

Critical inhaler technique errors in a severe asthma service - identifying the need for a validated scoring system

Authors: De Vos R, Longstaff J, Heiden E, Neville D, Jones T, Chauhan A

Institution: Portsmouth Hospitals NHS Trust

Objective: Our aim was to evaluate the inhaler techniques of new patients attending the severe asthma service at Queen Alexandra Hospital in Portsmouth and to identify critical inhaler technique errors. These patients were already established on inhaled medication and had previously been taught how to use their inhaler prior to attending the service.

Methods: 35 patients were observed taking their prescribed inhaler by a Respiratory Nurse Specialist. Errors in technique were recorded using the seven recommended steps devised by the UK inhaler group.

Results: 100% of patients made one or more error in performing their inhaler technique, with 86% making four or more errors per device.

Discussion: National guidelines recommend that clinicians check patient's inhaler technique at every opportunity. Our study highlights the importance of this recommendation as all patients exhibited critically poor inhaler technique, despite being referred to secondary care with 'uncontrolled' asthma. Studies have shown that critical errors can be corrected or reduced with increased training, and identifying these errors will improve inhaler technique; the cornerstone of asthma care.

Conclusion: There are currently no guidelines on how clinicians can objectively measure inhaler technique, or which critical errors have an impact on health outcomes or reflect the effectiveness of inhaled asthma therapy. These findings highlight the need for a standardised and validated measurement of scoring inhaler technique errors and proposes the development of such a scoring system

Corresponding author: Ruth De Vos

Abstract Number: 39

A survey of HCP views on teaching methods applied during childhood asthma reviews and challenges to achieving optimal inhaler use

Authors: Hamilton M, Prime D, Akram G, Bennie M

Institution: GlaxoSmithKline

Aim: To explore healthcare professionals' views on type and suitability of teaching methods used during childhood asthma reviews. Preference for method types and challenges to optimal use of inhalers by children were also explored.

Methods: Data were collected using a self-administered electronic questionnaire via an advert to HCP networks of Asthma UK and Education for Health using Twitter and Facebook.

Results: 28 individuals participated (27 female, 1 male). The majority (n=19) were specialist respiratory nurses, with varied experience (<1 year to >20 years). Participants were mainly from NHS England (n=25) across primary and secondary care. Teaching methods used by most HCPs were (1) a child's own inhaler/spacer, (2) demonstration spacer and (3) placebo inhaler. These were considered suitable for use by the HCPs who pre-

ferred them over other methods including inhaler training aids, websites and posters/vignettes. None of the methods in use were considered 'unsuitable'. All participants thought they were adequately trained in correct inhaler use and most felt they had adequate resources (n=24), although less than half agreed they could easily obtain placebo inhalers and not all responded to having age-appropriate materials. Children and parents were reported to be engaged during asthma reviews but preparation for appointments was found to be poor. A 'lack-of-understanding' was reported to be the main challenge to achieving optimal use of inhalers by children.

Conclusion: HCP views on teaching methods, perceived suitability and general preference have been explored. Areas for improvement include: obtaining placebo inhalers, access to age-appropriate materials and preparation for appointments. HCPs treating children with asthma need appropriate time and resources to effectively educate children and caregivers in all areas of asthma management. If realised, levels of understanding are expected to improve and have a positive impact on asthma control.

Corresponding author: Melanie Hamilton

Abstract Number: 40

Access to respiratory healthcare for people with a severe mental illness (SMI) and obstructive airways disease (asthma, COPD): a qualitative study

Authors: Mitchell C, Zuraw N, Twohig N, Delaney B, Dolan N, Hulin J, Walton E

Institution: University of Sheffield

Aim: To explore with people with a SMI and obstructive airways disease: (1) barriers and facilitators to respiratory healthcare and (2) the impact of the SMI on the self-management of respiratory health.

Methods: General practice staff undertook database searches to identify and screen eligible participants prior to postal invitation to participate (10 general practices). Semi-structured interviews were undertaken with consenting respondents. Anonymised, transcribed interview data were organised using NVivo software. Self-conscious iterative thematic analysis identified emergent themes linked to coded data. This process was subject to independent verification.

Results: Participants (6 female, 4 male) were diverse in age (45–74 years). Six had co-morbid asthma and four had COPD. Interviews are ongoing. Four key themes have been identified to date. 'Social support' was an enabler of healthcare (eg, carers accompanying participants to appointments, neighbours calling for help during illness). Family and friendship networks were often disrupted by life trauma and the wider psychosocial impact of mental illness. The majority of participants lived alone and reported 'social isolation'. Breathing problems and financial constraints compounded anxiety associated with getting out and sometimes excluded patients from access to healthcare. Relational continuity with local healthcare practitioners helped counteract isolation and psychological barriers to healthcare. Smoking was embedded in daily routines and widely ritualised 'for stress'. Interventions such as stop-smoking support and pulmonary rehabilitation to support self-care were poorly accessed, if at all. Smoking cessation services were not perceived to support a need to develop alternative self-management strategies to support mental health.

Conclusions: Interventions to reduce social isolation and optimise supportive networks and self-care could alter the restrictive housebound trajectory for those with SMI and co-morbid respiratory disease and improve access to healthcare. There is a need to co-design accessible smoking cessation treatments with people with SMI, to address mental health concerns and provide stress management support.

Corresponding author: Caroline Mitchell

Abstract Number: 36

TANDEM (Tailored intervention for ANxiety and DEpression Management in COPD): qualitative evaluation from the pilot/feasibility

Authors: Mammoliti K-M, Sohanpal R, Barradell A, Taylor SJC, Pinnock H

Institution: Queen Mary University of London

Aim: Those living with COPD have a higher risk of anxiety/depression which increases with the severity of their COPD. TANDEM is a randomised controlled trial investigating whether a cognitive behavioural approach (CBA) intervention, delivered by trained respiratory healthcare professionals and preceding pulmonary rehabilitation, improves anxiety/depression outcomes and pulmonary rehabilitation attendance/completion, thereby reducing functional limitations. The aim of the study was to assess the feasibility of the TANDEM CBA intervention prior to a definitive trial.

Methods: Individual face-to-face interviews were conducted with study participants following completion of intervention delivery (intervention, n=4; control, n=3). Reasons and experience of participating, experience of receiving the intervention and suggestions for improvement were explored. Interviews were recorded, transcribed verbatim and analysed thematically.

Results: Identified themes: (1) Negative impact of COPD and anxiety/depression; (2) willingness to be involved in TANDEM; (3) acceptability of the recruitment process; (4) acceptability of the intervention; (5) refinements in the recruitment process and intervention for the main trial.

Conclusion: The participants' experience of the TANDEM CBA intervention was consistently reported as positive. Practical skills learnt were easily translated into everyday tasks, leading to participants feeling empowered in their ability to break the vicious cycle of anxiety/depression, in turn inspiring overall confidence, especially in their ability to manage their condition and improvement in their physical abilities.

Corresponding author: Kristie-Marie Mammoliti

Abstract Number: 17

Incidence of type II diabetes in chronic obstructive pulmonary disease

Authors: Gayle A, Dickinson S, Poole CD, Pang M, Quint J

Institution: Boehringer Ingelheim Ltd

Aim: To estimate the incidence of type II diabetes mellitus (T2DM) among people with COPD and investigate whether exposure to inhaled corticosteroids (ICS) and exacerbation status is associated with developing T2DM.

Methods: This descriptive cohort study used primary care data from the UK Clinical Practice Research Datalink (CPRD). People

with a diagnosis of COPD, any smoking history, and registered in practice between January 2010 and December 2016 were selected. Crude incidence rates and cumulative prevalence by age, gender and social deprivation were determined. Using a nested case-control design, we matched each patient with incident T2DM (cases) with five non-T2DM controls by age, gender and GP practice at T2DM diagnostic date. Logistic regression measured the association between ICS exposure, frequent exacerbations (2 or more annually) and T2DM co-morbidity, adjusting for lifestyle factors and co-morbidity.

Results: We identified 220,971 COPD patients with a mean age at diagnosis of 66 years (95% CI 65 to 66), of whom 54% were male. The cumulative prevalence of T2DM was 9.27% (95% CI 9.15% to 9.39%). The incidence of T2DM was 1.26 per 100 patient years (95% CI 1.24 to 1.28), and was higher among men than women (1.32 vs. 1.18). The adjusted odds ratio (OR) for developing T2DM was 1.47 (95% CI 1.36 to 1.60) among frequent exacerbators versus infrequent. All levels of ICS exposure increased the likelihood of T2DM incidence compared with those not exposed; most affected were patients receiving >800 µg budesonide equivalent daily (OR 1.73, 95% CI 1.65 to 1.82).

Conclusion: Incidence of T2DM among COPD patients is high. Exposure to ICS and frequent COPD exacerbations are independently associated with elevated risk of developing T2DM in this population.

Corresponding author: Alicia Gayle

Abstract Number: 77

The working-age experience of living with chronic obstructive pulmonary disease (COPD)

Authors: Masters L, C de C Williams A, Cassidy E, Simpson, J
Institution: UCL

Aim: To understand, in greater depth, the impact that COPD has on quality of life for individuals of a working-age.

Methods: A qualitative investigation was conducted in 11 adults with COPD aged between 52 and 63. A framework analysis approach was used to analyse the data.

Results: Ten themes were identified, which interact in complex and nuanced ways. The themes identified were: valuing giving back, valuing independence, conflict with the COPD, helplessness versus agency, changed relationship to health, loss of control, self-efficacy, resilience, readiness and empowerment versus disempowerment from services.

Conclusion: The study sample reported very few concerns specific to their age group. The majority of participants did not report concerns about loss of employment, for example. However, changes to their role within the family and the need to be cared for by their children were reported as being particularly distressing aspects of living with COPD. Participants also reported complex relationships to making lifestyle changes, such as stopping smoking. Participants commonly reported a lack of 'readiness' for making changes, and some experienced services as disempowering when this sense of not being ready was not taken seriously. These areas need further exploration.

Corresponding author: Lisa Masters

Abstract Number: 75

Quality of life differences between working-age and older adults with chronic obstructive pulmonary disease (COPD): a meta-analysis

Authors: Lisa Masters, Dr Amanda C de C Williams, Dr Emma Cassidy, Jane Simpson

Institution: UCL

Chronic obstructive pulmonary disease (COPD) has a significant impact on quality of life. It could be argued that the impact COPD has on day-to-day life differs according to an individual's life stage. This research is a systematic review and meta-analysis of the COPD quality of life literature. Studies which have compared quality of life scores between working-age and older adults have been included, along with studies that have looked at age differences between individuals scoring high or low on quality of life measures. A total of 10 studies have been included. Overall, there was no significant difference found between working-age and older adults with COPD on measures of quality of life. It is concluded that there are likely to be multiple other factors which impact quality of life in individuals with COPD, and these need to be considered in further depth.

Corresponding author: Lisa Masters

Abstract Number: 76

Making a diagnosis of asthma in primary care: a qualitative study of current practices and challenges

Authors: Akindele A, Daines L, Cavers D, Pinnock H, Sheikh A
Institution: Asthma UK Centre for Applied Research, Usher Institute, University of Edinburgh Usher Institute, University of Edinburgh

Aim: Misdiagnosis (over-diagnosis and under-diagnosis) of asthma is common. Under-diagnosis can lead to avoidable morbidity and mortality, while over-diagnosis results in excessive spending and exposes patients to unnecessary side effects of treatment. This study aimed to explore the diagnostic approach and challenges faced by general practitioners (GPs) and practice nurses when making a diagnosis of asthma.

Methods: A mixture of purposive and convenience sampling was used to recruit participants. GPs and nurses working in NHS Lothian, Scotland were interviewed using in-depth semi-structured qualitative interviews. Transcripts were analysed using a thematic approach.

Results: 10 GPs and 5 nurses were interviewed. Participants weighed up an individual's probability of asthma which contributed to their decision to conduct peak flow monitoring, spirometry and/or a trial of treatment. Challenges in the diagnostic assessment of asthma included time pressures, the variable nature of asthma, overlapping clinical features of asthma with other conditions such as chronic obstructive pulmonary disease in adults and viral illnesses in children. To improve diagnostic decision-making, participants suggested improved educational opportunities and better diagnostic tools. The idea of a clinical prediction calculator to guide the asthma decision-making process was appealing to the nurses interviewed; however, most GPs felt that their clinical judgement would be preferable. Participants were also positive towards the idea of diagnostic hubs as they felt hubs would provide greater availability of tests. However, some raised concerns about funding and deskilling primary care practitioners.

Conclusions: Clinical judgement of the probability of asthma was fundamental in the diagnostic process. Tests (including trial of treatment) to confirm or refute the working diagnosis were chosen based on probability and local availability. To improve the diagnostic pathway for asthma, standardising the clinical assessment made by individual healthcare practitioners should be supported by access to diagnostic services for additional investigation and clarification of diagnostic uncertainty.

Corresponding author: Adeola Akindele

Abstract Number: 59

The use of a novel case-finding algorithm in the identification of chronic obstructive pulmonary disease (COPD) patients in primary care: baseline results of the ASSIST study

Authors: Ray E, Kruk, H, Gillett K, Culliford D, Lin X, Jordan R, Thomas DM, Price D, Wilkinson T

Institution: University Hospital Southampton NHS Trust

Aim: Chronic obstructive pulmonary disease (COPD) accounts for a significant proportion of hospital admissions in the UK and is a leading cause of death worldwide. Missed opportunities for early diagnosis and optimisation of treatment are common in primary care. We implemented a case-finding strategy in order to identify previously undiagnosed patients with COPD who may have attended their GP practice with symptoms of the disease (ASSIST study, REC: 16/5C0629).

Methods: Ever smokers aged 40–79 years with an estimated risk score $\geq 22.5\%$ were identified using a published Read code-based case-finding algorithm (TargetCOPD score), applied to primary care records to actively case-find smokers with signs and symptoms of COPD. Eligible patients were invited to attend their GP practice for a specialist respiratory review including spirometry testing.

Results: 2,213 patients across 12 GP practices in Hampshire, UK were identified. Of these, 611 were deemed ineligible by the GP, leaving 1,602 invited. 383 (23.9%) patients responded to an initial mail-out, and 288 (male 51%, mean age 63, SD=6.71) were consented into the study following further eligibility checks and accounting for non-attenders. Overall, 31% (89) demonstrated obstructed spirometry (FEV1/FVC or FEV1/VC < 70) with 15.2% (44) having a fixed obstruction less than the lower limits of normal. Of those with an FEV1/FVC or FEV1/VC < 70 , 66% (59) had mild obstruction (FEV1 $> 80\%$ predicted) and 34% (30) had moderate obstruction (FEV1 50–79% predicted). 85% (76) with obstructed spirometry also reported chronic respiratory symptoms and 63% (55) had an MRC ≥ 2 . 66 (23%) patients were current smokers and overall the mean pack-year was 24.68 (SD=20.47).

Conclusions: The results demonstrate that actively case-finding patients for COPD using an electronic algorithm applied to GP records identified patients with obstructed spirometry and symptoms of COPD. Further analysis and follow-up data will examine whether using the case-finding algorithm results in earlier identification of COPD in a cost-effective manner and an improvement in quality of life for patients.

Corresponding author: Emma Ray

Abstract Number: 84

A qualitative study: the acceptability of a 'case-finding for COPD' clinic to patients in GP practices across Hampshire

Authors: Rose D, Summers R, Ray E
Institution: University of Southampton

Aim: Chronic obstructive pulmonary disease (COPD) is an umbrella term used to describe emphysema and chronic bronchitis. A late or missed diagnosis not only has an impact to the individual but also incurs substantial healthcare costs. Approximately 1.2 million people are living with diagnosed COPD in the UK, with potentially a further 2 million people remaining undiagnosed. A targeted 'case-finding for COPD' study (ASSIST, REC: 16/5C/0629) has been implemented in GP practices across Hampshire. To explore the views and experiences of patients attending case-finding clinics, we conducted a qualitative study.

Methods: 15 patients attending a case-finding clinic for COPD participated in semi-structured telephone interviews in 2017. Seven patients had symptoms and spirometry suggestive of COPD, and the remaining patients had no evidence of COPD present. All interviews were conducted using an approved interview schedule, which were audio-recorded and transcribed verbatim. Transcripts were then analysed, and semantic and latent themes were developed and peer reviewed.

Results: All patients stated they valued the meaningful relationships built with clinic staff, who they described as approachable and professional. In general, patients brought concerns and issues to the clinic, but left with a better understanding of their symptoms and an awareness of self-management strategies. Improvements in symptoms due to positive behavioural changes including losing weight and stopping smoking was a key outcome for both groups of patients.

Conclusions: Case-finding clinics were positively received by a majority of patients with and without airflow obstruction. Patients were more knowledgeable about their respiratory disease, were able to self-manage more effectively and had made positive behavioural changes as a result of attending the clinic. However, some patient's reported poor memory recall of events at the clinic and, because of the small sample size in this qualitative review, it is difficult to generalise the results.

Corresponding author: Danielle Rose

Abstract Number: 67

The ASSIST study: an analysis and thematic review of feedback questionnaires from patients attending a case-finding for COPD clinic

Authors: Ray E, Gillett K, Kruk H, Summers R, North M, Thomas DM, Wilkinson T
Institution: University Hospital Southampton NHS Trust

Aim: A late or a missed diagnosis of chronic obstructive pulmonary disease (COPD) in primary care is associated with significant healthcare costs and poor patient outcomes. The ASSIST study (REC: 16/5C/0629) implemented a computerised case-finding algorithm in primary care records to identify previously undiagnosed patients at risk of having COPD.

Methods: In total, 1,602 patients were invited to attend a lung health check visit at their GP practice and 288 patients (male 51%, mean age 63, SD=6.71) were enrolled, reviewed by a res-

piratory nurse and completed spirometry testing. Patient feedback was sought via completion of a study-specific questionnaire, analysed and a thematic review of free text was completed.

Results: A proportion of patients (161, 57.5%) were concerned to receive an invitation letter explaining they may be at risk of having a lung condition, although 147 (53.3%) were not surprised. Patients (265, 94.3%) agreed that being invited made them feel supported by their GP practice but felt worried about attending the clinic (285, 100%). Common themes to attend included (1) concern for their own health, (2) benefitting their own health, and (3) benefit for others. 283 (99%) patients stated that attending the clinic was a positive experience, whilst 223 (80%) agreed that it had made them think about their health. In general, patients expressed that attending the clinics (1) was a positive learning opportunity, (2) had provided reassurance, and (3) that future clinics should be available to other patients.

Conclusions: Although patients were concerned they may be at risk of having a lung condition, patients who attended the clinic overwhelmingly found it a very positive experience. This was due to the thorough assessment at the visit, perceived expertise of the staff conducting the clinics and advice provided, which led to patients recommending continuing the service in the NHS.

Corresponding author: Emma Ray

Abstract Number: 88

Generating social networks and resources (GENIE) in COPD: evaluating benefits and costs in Southampton Community COPD Service

Authors: Welch L, Lin X, Vassilev II, Rogers A, Orlando R
Institution: University of Southampton (NIHR Wessex CLAHRC)

Background: Currently the evidence base for self-management support in COPD has no one intervention or specific component that is wholly successful in COPD (Walter 2010, Peytremann-Bridevaux 2008, Taylor 2014). Therefore a novel approach was undertaken to supporting self-management by enlisting support through a method designed to increase social assets: GENIE (Generating Engagement in Networks). GENIE is a facilitated social network tool designed to increase personal networks and link people to community resources.

Aims: This study aims to evaluate the healthcare utilisation and quality of life in COPD patients using GENIE alongside usual care after leaving the COPD service, with those offered usual care.

Methods: The study is a pilot two-armed parallel single-blind block randomised controlled trial. 60 subjects with mild to very severe COPD were recruited from the East of Southampton post-pulmonary rehabilitation and COPD maintenance exercise therapy. Subjects were either offered a usual PR discharge plan (exercise DVD and Breathe Easy literature) or a facilitated session with the GENIE social networking tool. Six core questionnaires were used in the evaluation. Subjects completed health utilisation, EQ-5D scores, COPD Assessment Tool (CAT), GAD, PHQ-9 and HIEQ at baseline prior to the intervention. These outcomes measures were repeated at a 3-month follow-up visit.

Results: The intervention group and control group were compared at baseline and at 3 months; the groups were evenly distributed. Clinical results indicate clinical stability in CAT, GAD and PHQ-9 with marginal improvements in favour of the intervention. Health utilisation costs fell by 40% in the intervention group and

by 0.64% in the control arm. Quality of life increased in the intervention group by 6% and decreased in the control group by 4%.

Conclusions: Comparative analysis continues, but currently the results favour intervention reducing NHS activity, cost and improved perceived patient quality of life.

Corresponding author: Lindsay Welch

Abstract Number: 70

Making Waves: an asset-based community development approach to improve self-management, social inclusion and mental well-being in people with COPD

Authors: Sewell L, Taylor A, Dodd P, Monkhouse J, Khan A, Kerslake M, Lord V, Lowton-Smith S, Fessey V, Krumins S, Gelder C

Institution: Coventry University

Aim: Making Waves (MW) clinics are an assets-based innovation that blend social activities with peer and clinical support. The first MW clinic was developed in Coventry in 2015. This was spread to six further sites in the East and West Midlands. The aims of the evaluation were to describe the population that attend MW clinics, to observe changes in health status and to measure participants' ability to self-manage their COPD.

Method: This was a prospective observational study. Outcome measures including the COPD Assessment Test (CAT), the Medical Research Council (MRC) Breathlessness Scale, Warwick Edinburgh Mental Well-Being Scale (WEMWBS), Hospital Anxiety and Depression Scale (HADS), EuroQol 5D and the Patient Activation Measure (PAM) were obtained at baseline, 3 months and 6 months.

Results: Following NHS ethical approval, 145 participants consented to participate in the evaluation from April to December 2017. 67 participants had complete datasets at 6-month follow-up. Mean age was 72.2 (SD 7.7) years, 53% were female and 38% lived alone. 68% of participants had a baseline MRC breathlessness score of 3 or higher. 44% and 54% of participants reported baseline HADS score of 8 or above for anxiety and depression respectively. 50% recorded PAM levels 1 or 2 at baseline, indicating low levels of activation to self-manage. Scores for the EQ5D and CAT improved significantly from baseline to 6 months in the 67 participants with complete datasets. 35% of participants increased their PAM levels by at least one level from baseline to 6 months.

Conclusion: MW clinics are a novel innovation that may help participants to improve their levels of health status and capacity to self-manage their COPD. MW clinics have the potential to improve social isolation and are a valued addition to existing respiratory services.

Corresponding author: Louise Sewell

Abstract Number: 45

Baseline findings of a training needs analysis (TNA) for general practitioners and practice nurses during the ASSIST study

Authors: Kruk H, Astles C, Ray E, Gillett K

Institution: University Hospital Southampton, CLAHRC Wessex

Objective: Our aim was to evaluate a self-reported current level of respiratory knowledge among general practitioners (GPs) and practice nurses (PNs).

Methods: A training needs analysis (TNA) was offered to all clinical staff in 12 GP practices participating in the ASSIST study. The TNA is a self-assessment tool with a scoring system on knowledge of (1) spirometry, (2) asthma, (3) chronic obstructive pulmonary disease (COPD), (4) influences or risks around asthma and COPD, (5) inhaler technique, and (6) guidelines and shared decision-making (SDM). A low score indicated the individuals' perceived knowledge about the subject required improvement, whereas a high score indicated that the individual felt confident about their knowledge of that subject.

Results: GPs (n=7): The self-reported scores were as follows (shown as mean/maximum possible score, minimum–maximum score): spirometry (7/24, 3–15), inhaler technique (13/24, 11–16), knowledge of asthma and knowledge of COPD (both scored 27/40, 17–33), influences or risks around asthma and COPD (17/24, 12–22) and guidelines and SDM (18/32, 8–31).

PNs (n=15): The self-reported scores were as follows: guidelines and SDM (21/32, 8–28), influences or risks around asthma and COPD (14/24, 10–22), knowledge of COPD (24/40, 19–33), knowledge of asthma (26/40, 19–34), spirometry (16/24, 11–23) and inhaler technique (19/24, 12–24).

Conclusions: The results show that self-reported knowledge of spirometry and inhaler technique amongst GPs is low, in contrast to PNs who scored highly in these areas with one PN self-reporting a maximum score for inhaler technique. Conversely, PNs scored themselves lowest for guidelines and influences or risks around asthma and COPD, whereas the GPs scored themselves highest in these areas. This contrast in reported levels of knowledge suggests that there is a knowledge gap across primary care clinical teams. However, the TNA is a self-reported subjective measure which may not capture actual skill or knowledge level.

Corresponding author: Helen Kruk

Abstract Number: 34

Can a single-use spacer be used effectively on multiple occasions?

Authors: Sanders MJ, Tran C

Institution: Clement Clarke International Ltd

Aim: We were interested to understand if a disposable spacer – whose design origins and current purpose are for single use, emergency situations and for which regular cleaning is neither relevant nor feasible – could be used effectively on more than one occasion.

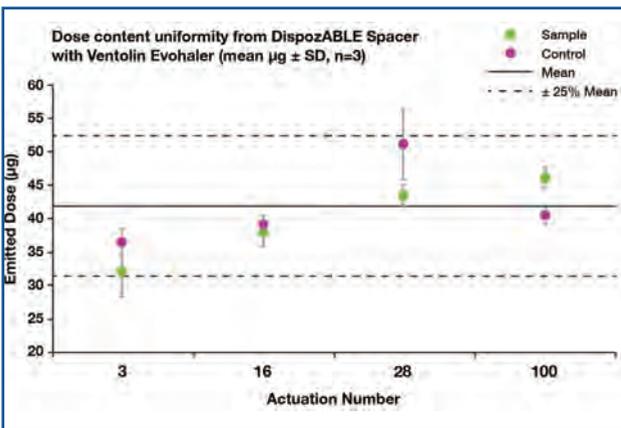
Method: We have evaluated the emitted delivered dose content uniformity (DCU) of salbutamol from Ventolin Evohaler (100 µg metered dose, GSK) pressurised metered dose inhaler (pMDI) via the DispozABLE Spacer (Clement Clarke). pMDIs were primed and shaken per manufacturer's instructions and connected to a dose unit sampling apparatus (DUSA, Copley Scientific, operated at 28.3 L/min) via the DispozABLE Spacer (Figure 1). Sample



Figure 1. pMDI-Spacer-DUSA

testing was completed: four sets of two actuations (#3–4, 16–17, 28–29 and 100–101) were dispensed into a single DispozABLE Spacer with drug recovery from the actuator and DUSA. Immediately following sample testing, for mass balance purposes, four sets of control testing were completed using a new Spacer on each occasion with recovery from actuator, Spacer and DUSA. Salbutamol was quantified using validated HPLC and reported as salbutamol base.

Results: Overall mean±SD salbutamol recovery (μg) did not differ between Sample and Control: 11.0 ± 1.5 and 10.6 ± 1.2 (on actuator) and 40.0 ± 6.0 and 41.9 ± 6.3 (DUSA), respectively. The mean values for each actuation set ($n=3$ pMDIs) are shown in Figure 2, demonstrating the delivered emitted DCU through the canister life. No value was outside 75–125% of the mean, remaining therefore within acceptable limits.



Conclusion: The multiple use of a single DispozABLE Spacer through the canister life of the Ventolin Evohaler did not have a detrimental effect on the dose content uniformity of salbutamol. These data suggest that a patient could use the Spacer repeatedly during a situation that required multiple puffs of drug – for example, in the hospital emergency room, as an inpatient and/or when access to nebulised drug is not immediately available.

Corresponding author: Mark Sanders

Abstract Number: 47

Perceptions of COPD patients of the proposed withdrawal of high-dose inhaled corticosteroids prescribed outside guidelines

Authors: Gilworth G, Harries T, Corrigan C, Thomas DM, White P
Institution: Kings' College London

Background: Guidelines recommend the prescription of high-dose inhaled corticosteroids (ICS) in COPD only for patients with severe or very severe disease. High-dose ICS are commonly prescribed outside guidelines for mild or moderate COPD despite the lack of evidence of their benefit. They may cause side effects including increased risk of pneumonia.

Aim: To explore patients' opinions and feelings about using high-dose ICS prescribed outside guidelines and their attitudes to proposed withdrawal.

Methods: One-to-one semi-structured qualitative interviews were guided by a topic list. This included participants' understanding of COPD, length of use of ICS, perceived beneficial and adverse effects, concerns regarding symptom control and required support during possible withdrawal. Participants under-

went spirometry testing to confirm COPD severity. Interviews took place at a location of the participants' choice, were audio-recorded and transcribed verbatim. Thematic analysis is underway using N-Vivo to assist data organisation.

Results: Twenty-two interviews were completed. Most participants were seen at home. Two recordings were lost due to technical issues, three participants did not meet spirometry eligibility criteria. Many participants were not aware they were using a high-dose ICS or of the risk of side effects. Attitudes to risk of side effects varied. Some participants were unconcerned by what they perceived as low risk to them individually. Others were concerned. Most would be willing to attempt withdrawal or titration to a lower dose of ICS once provided with a reasoned explanation. Participants expressed fears of worsening symptoms on withdrawal of the ICS.

Participants' opinions of the support they should receive whilst withdrawing from ICS included monitoring phone calls and maintaining access to inhalers for immediate use should their symptoms deteriorate.

Conclusions: Most COPD participants would be willing to withdraw from high-dose ICS with adequate support. They would welcome more information relating to their medication and risks of side effects.

Corresponding author: Gill Gilworth

Abstract Number: 42

Implementing IMProved Asthma self-management as Routine Treatment: the IMP2ART programme

Authors: Pinnock H, Morrow S, McClatchey K, Taylor SJC, for the IMP2ART programme group
Institution: The University of Edinburgh

The challenge of implementing supported self-management for asthma

Supported self-management, which helps people adjust their treatment in response to changes in symptoms, improves day-to-day control and reduces the risk of asthma attacks. However, for many reasons, supported self-management is not widely implemented; fewer than a quarter of people replying to a recent Asthma UK web survey owned an action plan. Our recent systematic review concluded that successful implementation of supported self-management requires attention to patient resources, professional motivation and training, and organisational prioritisation and support.

How the IMP2ART programme will address the challenge

Building on the findings of preliminary IMP2ART studies and working with six general practices, Asthma UK, PRCS-UK and Education for Health, we will develop the components of an implementation strategy. For example:

- Patient resources to support self-management (eg, a range of action plans; flexible access to professional advice; digital options)
- Professional education to motivate and train practice teams (eg, online, team-based modules to raise awareness and provide specific skills)
- Organisational strategies to facilitate adoption (eg, audit/feedback; review templates; electronic action plans)

Facilitated by respiratory nurse specialists, practices will be encouraged to adopt and adapt strategies to suit their practice routines.

Refining the implementation strategy

We will recruit GPs, asthma nurses and admin staff from four practices to pre-pilot the implementation strategy and provide qualitative feedback on feasibility.

The IMP2ART UK-wide trial

Following a pilot (n=12 practices), we will undertake a national cluster RCT (n=144 practices) which will evaluate the impact and cost-effectiveness of the IMP2ART implementation strategy on unscheduled care (assessed from routine data) and ownership of action plans. A mixed-methods process evaluation will explore potential for scaling-up and sustainability.

Funding: IMP2ART is independent research funded by NIHR PGfAR (RP-PG-1016-20008). The views expressed are those of the authors, not necessarily those of the NHS, NIHR or Department of Health.

Corresponding author: Hilary Pinnock

Abstract Number: 22

Cochrane review of serious adverse events in regular treatment with salmeterol and inhaled steroids for chronic asthma

Authors: Cates CJ, Schmidt S, Ferrer M, Sayer B, Waterson S
Institution: St George's, University of London

Aim: Epidemiological evidence has suggested a link between beta2-agonists and increased asthma deaths. This Cochrane systematic review aimed to assess the risk of mortality and non-fatal serious adverse events in trials which randomised patients with chronic asthma to regular salmeterol and inhaled corticosteroids (ICS) in comparison with the same dose of ICS.

Method: We analysed data from 41 studies in 27,951 adults and eight studies in 8,453 children that compared regular salmeterol in addition to ICS against the same dose of ICS. We included parallel design controlled clinical trials on patients of any age and severity of asthma if they randomised patients to treatment with regular salmeterol and ICS, and were of at least 12 weeks duration. We conducted the review according to standard procedures expected by the Cochrane Collaboration.

Results: No deaths were attributed to asthma in any of the studies and there were no deaths in children. The results for all-cause mortality in adults are compatible with at best one less and at worst one more death from any cause (in comparison with one death on regular ICS alone). Non-fatal serious adverse events (admissions to hospital) were not increased beyond the play of chance in adults or children when regular salmeterol was added to ICS as randomised treatment.

Conclusion: We remain uncertain of the safety of salmeterol and ICS with respect to the risk of dying from asthma, while the results for non-fatal serious adverse events are too imprecise to completely rule out any increased risk. Clinical decisions regarding regular use of salmeterol in combination with ICS have to take into account the balance between known symptomatic benefits of salmeterol when used in combination with an ICS and the remaining degree of uncertainty associated with its potential harmful effects.

Corresponding author: Sam Waterson

Abstract Number: 28

Does the severity of COPD affect inspiratory power across different inhalers? Part 2: Non-capsule devices

Authors: Sanders MJ, Green A

Institution: Clement Clarke International Ltd

Aim: Pressurised metered dose (pMDI), soft mist (SMI) and dry powder (DPI) inhalers are popular as therapy delivery options in COPD but can differ markedly in resistance and inspiratory flow requirements. We explored whether disease severity could influence the ability of subjects to use these inhalers effectively.

Method: We measured device resistance ($R=kPa^{1/2}/L/min$) according to Clark and Hollingworth,¹ and interpolated mean values (n=6) for pMDI Evohaler (GSK), SMI Resimat (Boehringer Ingelheim), DPis Ellipta (powder blister, GSK) and Turbohaler (powder reservoir, AstraZeneca) at the device-effective flow rates identified from the literature² or attributed for calculation: Evohaler 10 L/min, Resimat 20 L/min, Ellipta 30 L/min and Turbohaler 30 L/min. Minimum inhalation duration was attributed on a pragmatic basis allowing for coordination, delivery and chase air times. Inspiratory power (airWatts/inhalation) was calculated as flow rate (L/s) x pressure (kPa) x duration (s). Using reference inspiratory flow profiles³ for subjects with moderate (n=12, FEV1 predicted 50–80%) and very severe COPD (n=10, <30%) we calculated the power that could be applied by an untrained subject inhaling against the device resistances at specified flows for the duration, expressing the result as a ratio of power generated by the subject to that required by the device.

Results: Flow rate, resistance, duration data and inspiratory power are given in Figure 1. Devices that propel the medication towards the patient (pMDI, SMI) required less inspiratory power than the higher resistance DPis. All of the devices were within the theoretical capability of the subjects for successful use.

	pMDI (Evohaler)	SMI (Resimat)	DPI (Ellipta)	DPI (Turbohaler)
Resistance (kPa ^{1/2} /L.min ⁻¹) [1]	0.01	0.03	0.07	0.10
Effective flow rate (L.min ⁻¹) [ref.]	10 [2]	20	30 [2]	30 [2]
Durations (seconds)				
Coordination	0.50	0.50	0.00	0.00
Delivery	0.20	1.20	0.25	0.25
Chase	1.80	0.80	1.75	1.75
Minimum duration (seconds)	2.50	2.50	2.00	2.00
Inspiratory power ratio (patient : device)				
moderate COPD	1 : 0.004 <input checked="" type="checkbox"/>	1 : 0.04 <input checked="" type="checkbox"/>	1 : 0.24 <input checked="" type="checkbox"/>	1 : 0.36 <input checked="" type="checkbox"/>
very severe COPD	1 : 0.008 <input checked="" type="checkbox"/>	1 : 0.10 <input checked="" type="checkbox"/>	1 : 0.61 <input checked="" type="checkbox"/>	1 : 0.87 <input checked="" type="checkbox"/>
Key to symbols <input checked="" type="checkbox"/> sufficient inspiratory power for device				
References				
[1] Clark and Hollingworth. J Aerosol Med 1993 https://doi.org/10.1089/jam.1993.6.99				
[2] Haidl et al. Respiratory Medicine 2016 https://doi.org/10.1016/j.rmed.2016.07.013				
[3] Wachtel et al. Respir Drug Del 2006; 2: 511-514.				

Figure 1 - Non-capsule inhaler inspiratory power

Conclusion: The data indicate that COPD disease severity has an important influence on ability to use these inhalers, with inspiratory power requirements potentially representing an important consideration for device selection particularly as disease progresses. We are currently undertaking further research to determine any effect of training on power requirements.

1. Clark and Hollingworth. J Aerosol Med 1993. https://doi.org/10.1089/jam/1993.6.99
2. Haidl et al. Respiratory Medicine 2016. https://doi.org/10.1016/j.rmed.2016.07.013
3. Wachtel et al. Respir Drug Del 2006; 2: 511-514.

Corresponding author: Mark Sanders

Abstract Number: 27

Does the severity of COPD affect inspiratory power across different inhalers? Part 1: Capsule devices

Authors: Sanders MJ, Green A

Institution: Clement Clarke International Ltd

Aim: Capsule dry powder inhalers (DPIs) differ markedly in resistance and inspiratory flow requirements. We explored whether COPD disease severity influenced the ability of subjects to use DPIs effectively.

Method: We measured capsule DPIs Handihaler (Boehringer Ingelheim), Breezhaler (Novartis) and Zonda (Laboratorios Liconsa/Teva) device resistance ($R = kPa \frac{1}{2} / L/min$, Clark and Hollingworth¹), and interpolated mean values for each DPI ($n=6$) at the literature²⁻⁴ device-effective flow rate (20, 50 and 30 L/min for Handihaler, Breezhaler and Zonda, respectively). Next, we connected the devices to a Copley LCP5 precision vacuum pump to determine capsule-emptying (inhalation duration) and calculated inspiratory power (airWatts/inhalation) as flow (L/s) x pressure (kPa) x duration (s). Using reference inspiratory flow profiles⁵ for subjects with moderate ($n=12$, FEV1 predicted 50–80%) and very severe COPD ($n=10$, <30%), we calculated the power an untrained subject could apply inhaling against the device resistances at specified flows for the duration, and expressed the result as the ratio of power generated by the subject to that required by the device.

Results: At the specified flow, Handihaler and Zonda capsules emptied in 2.5 s (Figure 1). The higher effective flow for the lower resistance Breezhaler led to capsule emptying in 1.5 s. Despite similar resistance and duration, Handihaler required less power than Zonda because of the lower flow requirement. Although Breezhaler is a lower resistance device, greater inspiratory power was necessary owing to higher flow requirement.

	Handihaler	Breezhaler	Zonda
Resistance (kPa ^{1/2} /L.min ⁻¹) [ref.1]	0.14	0.05	0.15
Effective flow rate (L.min ⁻¹) [ref.]	20 [2]	50 [3]	30 [4]
Capsule empty time (seconds)	2.5	1.5	2.5
Inspiratory power ratio (patient : device)			
moderate COPD	1 : 0.28 <input checked="" type="checkbox"/>	1 : 1.11 <input type="checkbox"/>	1 : 0.55 <input checked="" type="checkbox"/>
very severe COPD	1 : 0.41 <input checked="" type="checkbox"/>	1 : 1.15 <input type="checkbox"/>	1 : 1.22 <input type="checkbox"/>

Key to symbols	
<input checked="" type="checkbox"/>	sufficient inspiratory power for device
<input type="checkbox"/>	insufficient inspiratory power for device

References	
[1]	Clark and Hollingworth. J Aerosol Med 1993 https://doi.org/10.1089/jam.1993.6.99
[2]	Chodosh et al. J Aerosol Med 2004 https://doi.org/10.1089/089426801316970268
[3]	Ghosh et al. J Aerosol Med Pulm Drug Del 2017 https://doi.org/10.1089/jamp.2017.1416
[4]	https://www.mhra.gov.uk/home/groups/par/documents/websiteresources/con723050.pdf
[5]	Wachtel et al. Respir Drug Del 2006; 2: 511-514.

Figure 1 - Capsule DPI Inspiratory power

Conclusion: The data indicate that COPD severity has an important influence on the ability to use capsule inhalers. Some capsule inhalers may be beyond the capability of some COPD subjects to use correctly. While capsule inhalers appear similar, there are differences in duration of capsule emptying and inspiratory power that may be clinically relevant. Inspiratory power assessments may represent an important consideration for inhaler device selection and merits further investigation.

1. Clark and Hollingworth. J Aerosol Med 1993. <https://doi.org/10.1089/jam/1993.6.99>
2. Chodosh et al. J Aerosol Med 2004 <https://doi.org/10.1089/089426801316970268>
3. Ghosh et al. J Aerosol Med Pulm Drug Del 2017 <https://doi.org/10.1089/jamp.2017.1416>
4. <https://www.mhra.gov.uk/home/groups/par/documents/websiteresources/con723050.pdf>
5. Wachtel et al. Respir Drug Del 2006; 5: 511-514.

Corresponding author: Mark Sanders

Abstract Number: 65

Characterisation of blood eosinophils and their association with disease outcomes in steroid-naïve COPD patients in primary care: descriptive cohort study using the Clinical Practice Research Datalink (CPRD)

Authors: Ashdown HF, McFadden E, Thomas DM, Pavord ID, Butler CC, Bafadhel M, Smith M

Institution: University of Oxford

Aim: Blood eosinophils are a potential biomarker to guide choice of maintenance treatment in COPD. We aimed to explore blood eosinophil testing, its values, and their relationship to patient characteristics and disease outcomes in routine primary care.

Method: We used routinely collected data from UK primary care in the CPRD, linked with Hospital Episode Statistics. Included COPD patients were >40 years with smoking history and diagnostic spirometry, not previously treated with inhaled corticosteroids, starting a new inhaled maintenance medication between 2005 and 2015. Primary analysis used the most recent blood eosinophil count in the two years before the new treatment, divided into high (>150/ μ L) and low (<150/ μ L) groups. We explored the relationship of blood eosinophils to patient and disease characteristics; Cox regression compared eosinophil groups for time-to-first-exacerbation after maintenance treatment initiation.

Results: 30,384 patients fulfilled the inclusion criteria, of whom 18,462 (60.8%) had a valid eosinophil count. Testing occurred less in males, current smokers, asthma, increasing severity of COPD and increasing baseline exacerbation frequency. In those tested, median eosinophil count was 200 cells/ μ L (interquartile range 100–300/ μ L), with 31.8% in the low and 68.2% in the high group. Higher eosinophils were significantly associated with male sex, younger age, ex-smokers, lower severity classification, atopy, asthma and higher baseline exacerbations. Median time-to-first-exacerbation was 524 (95% CI 510 to 540) days, with no difference between the eosinophil groups (adjusted hazard ratio 0.98 (0.93–1.02, $p=0.26$)), and this did not change when the eosinophil threshold was increased to >300/ μ L. A high most recent eosinophil count was 98.4% predictive of a high mean eosinophil count over the previous two years.

Conclusion: In a primary care population commencing a new maintenance treatment, blood eosinophils are not a marker of prognosis. However, those with eosinophils tested may not be representative of the whole COPD population. Most recent eosinophil count may be a suitable surrogate for multiple values over time.

Corresponding author: Helen Ashdown

Abstract Number: 64

Use of blood eosinophils to predict outcomes under inhaled maintenance treatment in steroid-naïve COPD patients in primary care: new user cohort study using the Clinical Practice Research Datalink (CPRD)

Authors: Ashdown HF, McFadden E, Thomas DM, Pavord ID, Butler CC, Bafadhel M, Smith M
Institution: University of Oxford

Aim: Blood eosinophils are a potential biomarker to guide inhaled corticosteroid (ICS) treatment in COPD. We aimed to investigate whether blood eosinophil levels predict the effect of maintenance treatment with ICS versus non-ICS in routine primary care.

Method: We used routinely collected data from UK primary care in the CPRD, linked with Hospital Episode Statistics. Included COPD patients were aged >40 years with a smoking history and diagnostic spirometry, not already treated with ICS, starting a new inhaled maintenance medication (intervention group: ICS; comparison group: long-acting bronchodilator, non-ICS) between 2005 and 2015. Primary analysis used the most recent blood eosinophil count in the two years before the new treatment, divided into high (>150/ μ L) and low (<150/ μ L) groups. Primary outcome was time-to-first-exacerbation event after maintenance treatment initiation, compared between ICS and non-ICS groups, stratified by blood eosinophil group. Cox regression using covariates likely to contribute to confounding by indication, including severity and baseline exacerbation frequency, investigated the interaction of blood eosinophils.

Results: Of 8,452 patients, 50.2% initiated an ICS (68.0% high eosinophil) and 49.8% a non-ICS treatment (67.3% high eosinophil). Risk of exacerbation was higher in patients prescribed ICS than non-ICS, but with a lower risk seen in those with high eosinophils (hazard ratio 1.12, 95% CI 1.06 to 1.19) than low eosinophils (1.30, 95% CI 1.20 to 1.43) (p value for interaction, 0.005). The association was attenuated but remained significant (p=0.02) in a model adjusted for covariates including severity and baseline exacerbation frequency.

Conclusion: This is the first study demonstrating significant predictive effect of blood eosinophils on ICS treatment outcomes in primary care, in a very large COPD population studied. In contrast to results from trials, the ICS group had worse outcomes, likely due to residual confounding by indication. Blood eosinophils may be a low-cost and acceptable way to identify patients most likely to benefit from ICS.

Corresponding author: Helen Ashdown

Best Practice/Service Development Abstracts

Abstract Number: 49

Asthma friendly schools: an intervention to improve asthma management by staff in primary schools in Haringey

Authors: Kerr E, Holliday T, Singh G
Institution: University College London

Brief outline on the context: Asthma is the most common chronic health condition in children, causing significant morbidity and mortality in 9% of UK primary school children, or approximately three children in each class of 30 students. Haringey is

the sixth most deprived borough in London and has particularly poor outcomes for children with asthma.

Details of the issue: The NHS spends over £137m on asthma-related hospital care each year and yet, in 2016, 11 children in London died as a result of an asthma attack – almost half of all childhood asthma deaths in the UK. The National Review of Asthma Deaths highlighted a need for 'getting the basics right', including in the education sector.

Analysis of the problem: Primary schools could help to reduce preventable asthma admissions and deaths through the implementation of a set of standards to improve staff knowledge and confidence in managing asthma.

Strategy for change: This project aimed to promote collaboration between schools, healthcare and the local authority to improve asthma outcomes in Haringey via the implementation of five key 'Asthma Friendly' standards. Newly-designated 'Asthma Leads' in primary schools assisted with implementation of the standards and asthma training was provided to all staff.

Measurement of improvement: A pre- and post-intervention audit of each school used questionnaires to evaluate staff knowledge of asthma management.

Effects of changes: Pre-intervention, 36% of staff felt uncertain of the procedure to follow in an asthma attack. Post-intervention, 100% of staff agreed that they were confident in managing an asthma attack.

Lessons learned: Our simple and cost-effective intervention successfully filled a significant gap in staff knowledge of asthma management, suggesting that primary schools have a key role in the community in helping to reduce asthma morbidity and mortality. However, this requires a willingness to work with patience and persistence across sectors.

Corresponding author: Emma Kerr

Abstract Number: 25

A retrospective multi-practice audit identifying factors contributing to uncontrolled asthma in adults and children

Authors: Anderson S, Canavan M
Institution: Respiratory Care Solutions

Introduction: The national review of asthma deaths (2014) found that 46% of deaths could have been avoided if patients had been better managed in the year before they died. People did not receive key elements of routine care; many reviews did not include key components: 73% did not have their asthma control assessed and only 42% had an assessment of their medication use. Compliance with ICS was low (38% had fewer than four prescriptions in the year); 39% had more than 12 SABA inhalers in the last year.

Methods: Respiratory Care Solutions (RCS) has been working with a collaboration of eight GP surgeries to standardise the respiratory care and reduce variation. We retrospectively audited notes of 156 patients who had attended for an asthma review in the past six months.

Results: 156 people attended for an asthma review including 43 children. 18% had asthma and COPD, 53% (13% children) had uncontrolled asthma as defined by an asthma control test <20. Only 1% attended acutely. 96% of the patients who had poor asthma control were not taking their preventer inhaler regularly or had poor inhaler technique. Other factors contributing to

uncontrolled asthma were: rhinitis 21%, GORD 8%, laryngopharyngeal reflux 21% and anxiety 5%.

Discussion: A high percentage of asthma patients are at risk of exacerbation or death but lack insight into the importance of taking regular ICS therapy. Asthma patients require education and empowerment. It would be useful for Asthma UK to develop a patient passport similar to the BLF COPD passport, so patients are aware of ideal asthma management. It is important for clinicians to count both the reliever use and preventers issued to patients, but also a discussion with the patients about what they are using and when, because quite often pharmacies are collecting and patients are not using.

Corresponding author: Melissa Canavan

Abstract Number: 51

The Improving Asthma Care Together (ImpACT) project

Authors: Subramanian D, Greenwood S, Ali S, Bennett C, Lagnado H, Sutton L

Institution: Royal Derby Teaching Hospital NHS Foundation Trust

Introduction: The Improving Asthma Care Together (ImpACT) project implemented a novel model of care which provides an integrated responsive services for patients with asthma in Derby.

Problem: Our baseline audits showed that a low number of patients (20%) who were admitted to hospital had a management plan and only 20% were reviewed by their GP practice within 48 hours of discharge. Patients also found it difficult to access service and support during an exacerbation.

Strategy for change: We implemented a whole-scale service intervention which included in-reach to the emergency department, a ward discharge clinic, a 7-day telephone helpline and face-to-face review by specialist nurses within GP practices.

Measurement of improvement: A questionnaire was devised and patients were asked to complete this approximately 6 weeks following the intervention. A 10-point scale was used to ask patients what their confidence levels were in self-managing their asthma (0=no confidence and 10=highly confident) and how they rated their asthma control (0=poor and 10=excellent).

Effect of change: The service led to significant improvements in patients' self-reported assessment of asthma control and confidence in managing their own asthma (Figures 1–3; paired t-test $p < 0.001$; $n = 107$). Over 600 FeNO measurements were performed in primary care. Monthly asthma admissions from December to April have consistently been lower than the preceding year, despite an increase in respiratory attendances. 91% of genuine asthma admissions were followed up by our service.

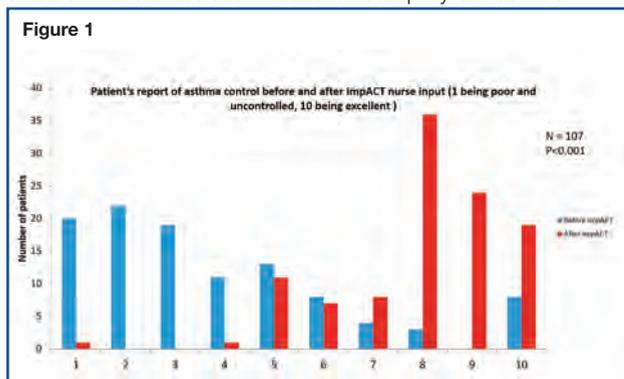


Figure 2

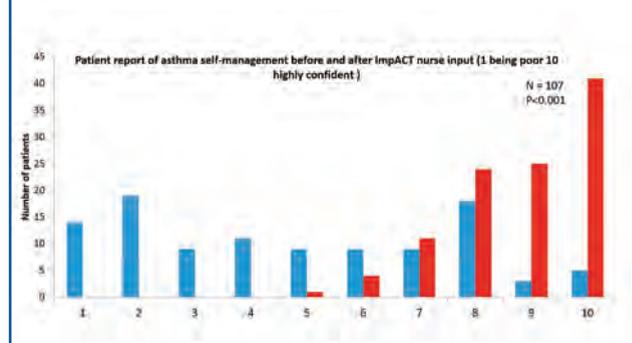
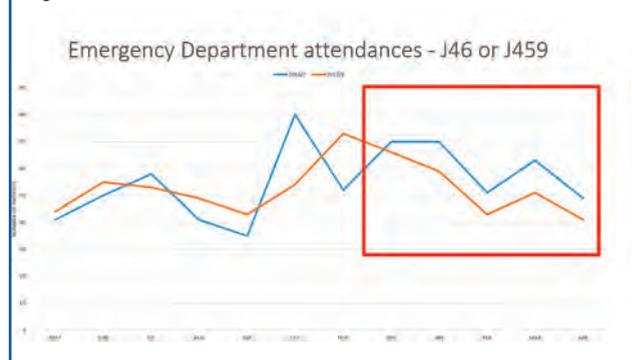


Figure 3



Lessons learned: The service led to an improvement in patient-reported asthma control and self-management. Qualitative feedback demonstrated that patients valued this service, in particular the responsiveness and knowledge of the staff. The service also led to a significant improvement in 48-hour follow-up reviews.

Message for others: An integrated responsive service for asthma can be effective in improving patients' asthma control, self-management and can lead to a reduction in asthma admissions.

Corresponding author: Deepak Subramanian

Abstract Number: 43

BREATHE – Outcomes of a different kind of breathlessness clinic

Authors: Gaduzo S, Gupta V

Institution: Cheadle Medical Practice

Introduction: Patients with breathlessness referred to cardiology or respiratory clinics are often sent on to the other specialty if the diagnosis is unclear. This can lead to a delay in diagnosis, duplication of investigations and inconvenience for patients. An audit of a sample of such referrals confirmed this. With support from CCG and FT, initially under the '100 day improvement' banner, we set up a joint clinic with a cardiologist and respiratory physician consulting together, having access to ECG, echocardiogram, spirometry and CXR. The aim was to see and assess patients in one stop if possible. If further investigations were necessary, they would be arranged and a report, results and treatment plan sent to the GP. Where possible, patients were signposted to appropriate community teams, self-help organisations, etc. All appointments were for new patients. Follow-up was carried out in individual specialty clinics.

Method: Patients were initially recruited from outpatient waiting lists. The results from the first cohort have been previously reported at the BTS Winter Meeting 2017. This report examines the second cohort of 53 attendees, the majority of whom were referred directly to BREATHE (Breathlessness Rapid Evaluation, Assessment, Treatment and Health Education) from one-year care using a template developed with GPs. More than half were assessed with only one outpatient attendance. Extra investigations included full lung function, HRCT thorax, stress echo, overnight oximetry, 24-hour ECG and cardiac MRI.

Results: There was a range of final primary diagnoses and a significant number with multifactorial causes. Of significance is the relatively high number with deconditioning, anxiety, high body mass index (data to follow). Patient feedback was very positive, most commenting that although they spent a couple of hours in the clinic, a lot was done and they liked the collaboration between consultants. The clinicians themselves comment that they have found consulting together rewarding and also an invaluable asset in terms of communication and learning between specialities.

Discussion: Although resource-intensive, this model of joint consultation and investigation offers an alternative symptom-based way of dealing with breathless patients whose diagnosis is not clear. We would like to develop the pathway and model further with more involvement of primary and community care teams.

Corresponding author: Stephen Gaduzo

Abstract Number: 53

Co-morbidities in high SABA users

Authors: Gaduzo S

Institution: Cheadle Medical Practice

Introduction: In 2014 the National Review of Asthma Deaths (NRAD) showed that high SABA use was associated with a higher chance of dying from asthma. Cheadle Medical Practice (CMP) is a suburban group practice consistently attaining maximum QOF points for respiratory, with low exception rates. We also have slightly lower admission rates for asthma compared to our CCG average. I wanted to see whether there was a correlation between high SABA use and co-morbidities, especially anxiety and depression, and whether these patients had attended for practice nurse asthma review in the previous year.

Method: A search was conducted on the clinical system (Emis) for patients with asthma diagnosis, but not COPD, with 12 or more issues of salbutamol in the previous 12 months. Their notes were individually checked for co-morbidities and reviews.

Results: CMP practice population is 12,038 and we have 875 on the asthma register (7.2%). 31 patients (3.5%) had been issued 12 or more SABAs. All had been invited for formal asthma review; only 32% had attended. All 31 patients had co-morbid conditions; depression and muscle-skeletal problems were the commonest, each occurring in 42%. Anxiety was present in 26% and, interestingly, drug abuse was listed in 16%. All who had attended for practice nurse review had their SABA put on 'variable repeat' during that review. During the notes review all were converted to this to make tracking prescription frequency easier. 'Frequent SABA use' alert was added to their notes. The CMP respiratory team will prioritise recalling these patients for review. Further work will include examining exacerbation and admission rates and ICS prescription compliance.

Corresponding author: Stephen Gaduzo

Abstract Number: 38

FeNO: taking the guess work out of asthma

Authors: Hart PV

Institution: Bower Mount Medical Practice, Maidstone

Introduction: There has been a great deal of discussion recently regarding the merits of using fractional exhaled nitric oxide (FeNO) as a diagnostic tool for asthma. NICE favours its use as an objective measurement. The PCRS is more reserved, with the stance that it can be useful when diagnosis is unclear but the cost implication for individual primary care practices is impractical and confounding factors may affect the accuracy of the results (Primary Care Respiratory Update, Vol 5, Issue 1, Spring 2018 pp 9 – 14). The discussion so far has centred around diagnosis rather than FeNO use in the management of asthma. The author was interested to see whether FeNO could be a useful tool, not just in diagnosis but in the actual management of asthma.

Method: Niox Vero kindly lent a FeNO machine and consumables for a period of 4 months to a primary care practice. A total of 63 patients were tested as part of their routine asthma review, 10 of whom were tested for diagnostic purposes.

Results: A range of benefits were ascertained. Of particular benefit was the ability to ascertain if symptoms were related to asthma or another known co-morbidity such as chronic obstructive airways disease or gastro-oesophageal reflux disease. This ensured that inappropriate escalation of asthma medications was prevented and gave reassurance that high-dose steroids could be safely reduced in some patients. This suggests that the cost of FeNO could be offset by the reduction in medications and inappropriate hospital referrals. Inflammation precedes exacerbation, so easy and early detection would suggest that life-threatening asthma attacks and the cost of emergency hospital admissions may also be prevented.

Conclusion: This small scale project indicates that FeNO could be a useful tool in the management of asthma. The author proposes that further research with a wider patient population be conducted.

Corresponding author: Patricia Hart

Abstract Number: 13

Potential for FeNO testing in general practice asthma management

Authors: Daw R, Petty D

Institution: Westcliffe Medical Practice, Shipley, Bradford

Context: NICE recommended FeNO testing to help diagnose asthma and as an option to support management in people who are symptomatic despite using inhaled corticosteroids (ICS).¹ FeNO testing has also been shown to be useful in predicting the response to ICS and in reducing ICS.^{2,3}

Analysis of problem: Little is known about how to use FeNO testing in 'real-world' practice. We aimed to pilot FeNO testing to see if it could improve:

- diagnostic accuracy of patients presenting with asthma-like symptoms
- patients' acceptance of an asthma diagnosis
- confidence in stepping-down ICS treatment

Strategy for change: Asthma nurses were trained to use the FeNO testing and how to apply it alongside normal clinical practice. Four nurses in five surgeries were trained. 107 patients were reviewed.

Measurement of improvement: Data were collected on FeNO testing used to assist/confirm asthma diagnosis, patients not accepting diagnosis and determining ICS step-up/down. Follow-up data were collected after 3 months.

Results: The mean age of patients was 46 (63% female). FeNO testing was used to assist in diagnosis in 39 (36%) patients, confirm existing diagnosis in 11 (10%) help patient accept the diagnosis in 1 (1%), improve adherence in 12 (11%) and to help ICS step-down in 27 (25%) and step-up in 26 (24%). Use of FeNO testing increased confidence in making an asthma diagnosis in 74 (69%) cases, stepping up/down ICS in 57 (53%) and increasing patient confidence in treatment changes in 39/51 cases (76%). ICS was increased in 12, reduced in 18 and used not to increase ICS in 22 patients. The net annual savings on ICS prescribing was £3,206, outweighing FeNO costs.

Lessons learnt: FeNO testing improves practitioner and patient confidence. Savings on ICS outweighed costs. Training is required to ensure appropriate targeting of FeNO testing.

1. NICE. <https://www.nice.org.uk/guidance/dg12>
2. Smith AD, et al. N Engl J Med 2005;352:2163–73.
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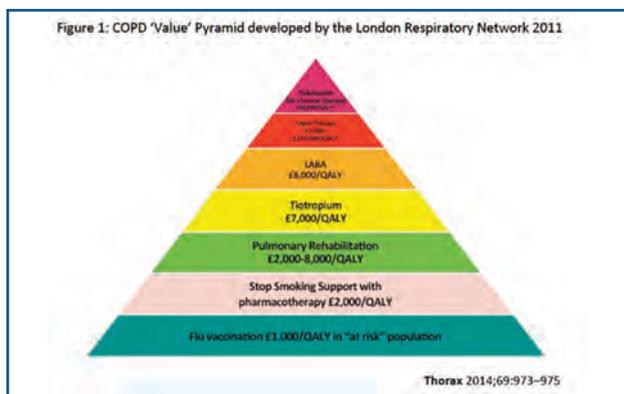
Corresponding author: Robert Daw

Abstract Number: 87

Seasonal influenza vaccination of inpatients admitted to hospital with acute exacerbations of COPD: a missed opportunity?

Authors: Vila P, Foley K, Vaghela A, Restrck LI
Institution: Whittington Health

Background: Acute exacerbations of COPD (AECOPD) are often triggered by respiratory viruses including influenza and are associated with significant morbidity and mortality. Annual influenza vaccination (IV) is a high value intervention in COPD (Figure 1; COPD Value Pyramid) and is recommended by NICE. While each flu season we admit patients with AECOPD who have not been vaccinated pre-admission, hospitals have not historically offered IV to inpatients.

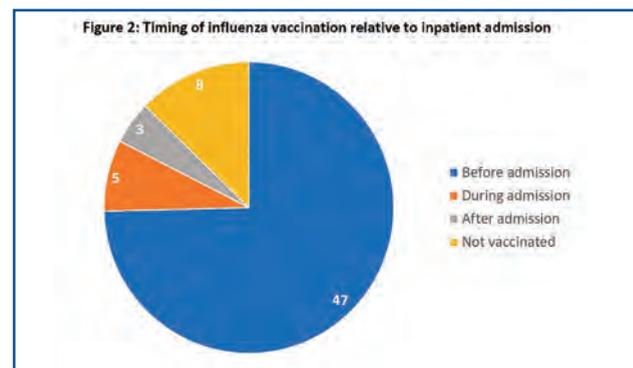


Aim: The aim of this study was to quantify (1) the number of inpatients admitted with AECOPD not vaccinated pre-admission at one London Trust over a 6-month flu season and (2) if/how they received IV subsequently.

Method: Patient demographics and vaccination status pre-admission and at flu-season end were determined for all inpatients admitted with confirmed AECOPD diagnosis (RCP Audit) from 1 October 2017 to 31 March 2018.

Age	
Mean (range)	48 (39-94) years
Smoking /tobacco dependence (self-reported)	
Current smoker	29/63 (46%)
Ex-smoker	34/63 (54%)
FEV1	
Mean (SD)	0.91 (0.39) litres
FVC	
Mean (SD)	1.91 (0.70) litres
MRC breathless score	
Median (range)	4 (2-5)

Case for change: 63 patients were admitted with AECOPD (Table 1; demographics); 16/63 (25%) were not vaccinated pre-admission. Of these, 5/16 (31%) were vaccinated during admission. Only 3/11 (27%) discharged without IV were subsequently vaccinated (Figure 2; IV status). 8/63 (13%) patients with AECOPD-related admission had not been vaccinated by 31 March 2018.



Adding flu vaccination to 'COPD Bundle': Patients admitted to hospital with AECOPD are arguably at greatest need of IV. Whilst 75% of patients had received vaccination pre-admission, 13% of this vulnerable group had still not been vaccinated by flu-season end.

Discussion: We believe that hospital admission represents an opportunity to offer IV to patients with COPD who have missed out and that vaccination pre-discharge would be cost-effective, particularly when comparing the relative costs of vaccination versus readmission with AECOPD secondary to influenza. Because a COPD Bundle is already part of standard care as an enabler of evidence-based interventions and IV is an evidence-based intervention, we now include IV status and vaccination as a component of our COPD Bundle and will evaluate the impact from October 2018 to March 2019.

Corresponding author: Pierre Vila

Abstract Number: 81

Does hospital at home improve patient-reported symptom burden associated with an acute exacerbation of chronic obstructive pulmonary disease? A retrospective audit of pre- and post-COPD assessment test scores

Authors: Sayat E, Middleton A, Roots D, Bhowmik A, Graham L
Institution: Homerton University Hospital NHS Trust

Background: Hospital at Home (HAH) is an evidenced-based model of care for the management of acute exacerbations of

chronic obstructive pulmonary disease (AECOPD).¹ The Adult Cardiorespiratory Enhanced and Responsive Service (ACERS) HAH team is an integrated seven-day respiratory team which has been documented to reduce COPD-related bed days and hospital admissions.² The impact on symptom burden was not reported. This retrospective audit analysed if ACERS HAH intervention improved patient-reported symptom burden measured using the COPD Assessment test (CAT).³

Method: All patients with COPD referred to ACERS HAH service self-administered the CAT questionnaire on the initial and final contact with the team. HAH included regular home visits or telephone calls to assess and monitor patients' AECOPD symptoms until they had resolved. All patients referred with an AECOPD from April to December 2017 with completed datasets were included in the retrospective analysis. 332 patients were referred to the service within the time period. Of these, 113 (33%) had complete datasets. Patients spent an average of 20 days (range 1–63) under HAH. 61 patients (54%) were female, 79 (70%) were ex-smokers and 82 (72%) had moderate or severe airflow obstruction.

Results: 94 patients (85%) had a reduction in their CAT score post HAH intervention. The overall mean (SD) difference in CAT scores was 6.83 (6.78) points (95% CI 5.57 to 8.10, $p < 0.0001$). The mean (SD) pre-CAT score was 28.31 (6.16) and post-CAT score was 21.48 (7.84).

Discussion: This retrospective audit demonstrated that the ACERS HAH service was both clinically and statistically effective in reducing symptom burden for patients following an AECOPD. The overall mean decrease in score met the proposed minimal clinical importance difference (MCID) proposed for the CAT of 2 points.⁴

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3. Jones PW, Harding G, Berry P et al. Development and first validation of the COPD Assessment Test. *Eur Respir J*. 2009 Sep;34(3):648–54. doi: 10.1183/09031936.00102509.
4. Kon SS, Canavan JL, Jones SE et al. Minimum clinically important difference for the COPD Assessment Test: a prospective analysis. *Lancet Respir Med*. 2014 Mar;2(3):195–203. doi: 10.1016/S2213-2600(14)70001-3. Epub 2014 Feb 4

Corresponding author: Laura Graham

Abstract Number: 35

Pilot project to identify undiagnosed respiratory disease in individuals accessing drug and alcohol services in Tower Hamlets

Authors: Addo B, Mohamed M, Davey C, Simpson J
Institution: Barts Health NHS Trust

Outline: Referrals to the community respiratory team in Tower Hamlets have risen in patients with a history of drugs or alcohol misuse. Amongst this population it is perceived a large number do not access primary care services, so diagnosis and management of health conditions occur at a more severe stage of disease. It is also known that the use of opiates can mask respiratory symptoms. It is therefore likely that a high level of undiagnosed respiratory issues are present amongst drug and alcohol users.

Aim: To assess individuals accessing drug and alcohol services who may have undiagnosed respiratory disease using spirometry.

Method: Links were established with RESET (drug and alcohol service). A respiratory physiotherapist and technician attended for five sessions over three weeks. Spirometry was offered to all individuals attending walk-in clinics. Smoking status was recorded and current smokers were offered referral to smoking cessation services.

Results: 20 individuals had spirometry testing. All those tested had a smoking history; 95% were current smokers, of which 32% accepted referral to smoking cessation.

Messages for others: This has shown that a significant number of patients accessing drug and alcohol services may have an undiagnosed respiratory disease. It has confirmed high levels of smoking amongst this population. There is potential for further joint working between respiratory services and drug and alcohol services with this group of individuals.

Corresponding author: Bianca Addo

Abstract Number: 89

Reviewing outcomes for patients attending a follow-on class after pulmonary rehab: a service evaluation

Authors: Stirton-Croft AJ, Murnane D, Austin G
Institution: Hertfordshire Community NHS Trust

Introduction and objectives: There are multiple benefits for those with chronic obstructive pulmonary disease (COPD) to complete pulmonary rehabilitation (PR). Short-term benefits include reducing dyspnoea, improving health-related quality of life, exacerbation reduction and improved exercise tolerance.^{1,2} Furthermore, the burden of long-term conditions (LTC)³ on the overstretched NHS means self-management and reducing symptoms associated with LTC such as COPD is essential. A service evaluation was carried out to establish if there are long-term benefits to attending a follow-on class after completing an NHS-provided PR course.

Method: In East and North Hertfordshire (E&NH) a specific PR follow-on class is held at Hartham Leisure Centre. It is based on the 12 station circuit of the PR course delivered by Hertfordshire community NHS Trust (HCT) with two additional exercises. Inclusion for the follow-on class is completion of the HCT PR course. Participants of the follow-on class were opportunistically invited to be re-evaluated for mobility, psychological and quality of life markers. There were no restrictions for length of time since completing the PR course or number of follow-on sessions attended.

Results: Overall it was found that those attending the follow-on group were still receiving beneficial effects up to 30 months after completion of the PR course. 87% of patients were walking further or equal to their pre-course assessment. Depression and anxiety markers were reduced over the same time period. Some individuals had reported exacerbations since completing the course. Of the patients reviewed, 62.5% had overall improvements in quality of life (CAT).

Conclusion: Follow-on exercise classes after completing HCT PR at Hartham Leisure Centre can have beneficial effects on quality of life, depression and anxiety measures and increasing mobility for at least 30 months following completion of a PR programme.

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Corresponding author: Alison Stirton-Croft

Abstract Number: 82

Understanding poor referral rates to pulmonary rehabilitation: an online survey of service providers

Authors: Haque HW, Early F, Welwood I, Deaton C, Johnathan F
Institution: Cambridge University Hospital NHS Foundation Trust (Addenbrookes Hospital)

Background: Pulmonary rehabilitation (PR) is an effective and cost-effective intervention for COPD; improving quality of life, fostering self-management skills and reducing hospital admissions due to exacerbations. Despite these benefits, in 2013/14 only 15% of eligible patients were referred to PR; of those, only 10% attended initial assessment.

Objectives: To identify barriers and understand the different kinds of work that people do around operationalising referral to PR services.

Methods: A 44-item online survey informed by Normalisation Process Theory (NPT) was circulated to 21 PR service providers in the East of England PR Network. Items included Likert-type scales and open questions. Analysis used descriptive statistics and thematic analysis of open questions.

Results: The response rate was 71% (15/21) (11 physiotherapists (73%); 2 nurses (13%), 2 other health professionals (13%)). Most PR programmes were commissioned by Clinical Commissioning Groups (94%) and provided by NHS Trusts (73.3%) as cohort (66.7%) and rolling programmes (33.3%) in community (68.2%) and hospital settings (13.6%). Most were group-based (75%). Referral was accepted from primary and secondary care. In open questions, providers' views of patients' perceived value of PR depended on good explanation of the service by referrer, with patients most likely to attend if the rationale for PR was properly explained at referral and word of mouth. Reasons for poor attendance were attributed to lack of motivation, limited knowledge of potential benefits, acute illness, co-morbidities and transport difficulties. Increased clarity of service providers' roles and greater professional awareness of PR were considered crucial to sustain PR referral rates and explained some variation in health-care professionals' referral rates.

Conclusion: The findings illustrate the interactions between service providers' capacity for action (provider judgements and decision-making process) and factors that drive the referral process.

Corresponding author: Hena Haque

Abstract Number: 74

The effectiveness of an integrated pulmonary rehabilitation (PR) introductory education session in improving capacity in the ACERs PR Service: a retrospective audit

Authors: Tipple J, Chan J, Kenward A, Huxen L, Green G, Graham L
Institution: Homerton University Hospital NHS Trust

Introduction: The National Pulmonary Rehabilitation (PR) Audit (2015) reported 31% patients dropped out between referral to assessment. The literature documents one barrier to lack of perceived benefit.¹ In 2015/5 44% of all initial assessments in the

Adult Cardiorespiratory Enhanced and Responsive Service (ACERs) PR service were not attended, which equalled 255 hours of clinical time wasted. With referral rates to the ACERs PR service increasing yearly, capacity has remained the same. This project piloted a PR education session aimed at reducing non-attenders and improving uptake to the ACERs PR service.

Method: All patients referred from primary care were included; those excluded were internally referred patients, consultant referrals, post-exacerbation PR referrals, non-English speaking patients or patients with a psychosocial/cognitive barrier limiting group participation. The monthly education sessions were co-led by a physiotherapist and a psychologist supported by an expert patient. Patients were educated on what PR, anxiety-related breathlessness and the patient experience of PR.

Result: From January to June 2018 a total of 170 patients were referred. Of these, 51% (n=86) were male, 90% (n=153) had COPD and 66% (n=102) had moderate or severe airflow obstruction. Overall, 33% (n= 56) attended a session. Of the 56 patients that attended, 80% (n=45) booked an initial PR assessment, 18% (n=10) declined PR and 2% (n=1) were referred to another service. In total, 114 hours of clinical time were saved through this model of care.

Conclusion: An integrated PR education session was successful in increasing the capacity of the ACERs PR service by reducing the number of wasted clinical hours from non-attenders. Rolling this out to all referrals to the service would increase the capacity even further. More work needs to be done to assess the impact of this model of care on completion rates, another challenge for both local and national PR services.

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Corresponding author: Laura Graham

Abstract Number: 50

Health literacy assessment in pulmonary rehabilitation: how well do we communicate with our patients through written patient information and literature?

Authors: Grimwood L, Sellers, V
Institution: BOC

Background/introduction: It was identified that a significant proportion of patients required help completing written paperwork during pulmonary rehabilitation (PR). This raised a concern regarding patients' health literacy levels that may not be a localised issue. An audit was conducted across all PR services to discover the extent of the problem. Existing and emerging literature suggests that poor health literacy is both a national and worldwide concern and that it is linked to poor clinical outcomes.

Specific measure: 98% of all patients will be able to understand the printed literature that is supplied as part of PR.

Method: Consecutive sampling of all consenting PR patients during the audit period (13 November 2017 to 2 February 2018) using an initial assessment and discharge questionnaire that had been piloted. A blank questionnaire was returned if a patient declined to take part in the audit.

Results: A total of 161 patients across nine regions and 25 venues completed the questionnaires. The Specific measure was not met. The audit found that 20% had a below functional health literacy score (METER), rising to 31% when calculated as an

adjusted METER score.¹ 26% reported needing help with understanding forms, letters or medicine labels, 43% reported difficulty remembering things, 20% reported trouble following a conversation in the past few months, 6% reported English was not their first language and 3% reported learning difficulties. 36% reported having hearing difficulties and 19% reported eyesight problems that were uncorrected.

Conclusion/recommendations: The findings identified a significant level of health illiteracy. Further work needs to be done regarding patient education across all health services, not just PR. The findings indicate that a significant number of patients may not be able to effectively self-manage due to health illiteracy, memory, cognition, eyesight, hearing and language barriers. This raises concerns regarding the safety, reliability and practicality of patients self-managing their respiratory condition.

1. Rawson et al, 2010

Corresponding author: Laura Grimwood

Abstract Number: 23

Increasing pulmonary rehabilitation referral rate for chronic obstructive pulmonary disease patients in a GP setting

Authors: Bannerman AR

Institution: NHS

Introduction: The British Thoracic Society (BTS) recommends all patients with chronic obstructive pulmonary disease (COPD) are offered pulmonary rehabilitation (PR). However, the referral rate is lower than the number of eligible patients.¹

Aim: The aim of this Quality Improvement Project (QIP) was to increase the percentage of eligible patients within one GP surgery referred to PR by discussing and offering referrals; if referrals were declined, data were collected regarding this.

Method: The SystmOne Clinical Reporting Tool was used to identify patients on the COPD register with MRC 3 or above.

Findings: Of 72 patients identified, 11 (15.3%) had been referred to PR and 61 patients (84.2%) had no documented referral. Following application of exclusion criteria, 29/61 unreferred patients were eligible for PR; of these, 15 declined and 14 accepted referrals. Reasons for declining referral included: family circumstances, carer role, location, mobility, wanted to consider referral and moving out of area. Later interventions included staff training regarding PR and the referral process with plans to incorporate this into annual COPD reviews. Following this QIP, all eligible COPD patients within the practice had discussed and been offered a referral to PR based on their electronic documentation. However, it is unknown if these patients attended or completed PR or if any clinical benefit was seen. Data collected relied on accurate electronic documentation which could indicate some eligible patients were missed. The next stage would review if this GP referral rate was maintained and whether staff found the training beneficial regarding discussing and referring to PR. The anecdotal reasons for declining referral provided an interesting insight into other factors affecting utilisation of local PR services.

1. National COPD Audit Programme: Resources and organisation of Pulmonary Rehabilitation services in England and Wales 2015. Pulmonary Rehabilitation: Time to breathe Better. National organisational audit report November 2015

Corresponding author: Amy Bannerman

Abstract Number: 72

A novel respiratory community-facing GPST training post

Authors: Simpson F, Bullard C, MacKenzie Ross J, Walters J, Suntharalingam J

Institution: Royal United Hospital Bath

Background: Since 2013 the GP Training Programme in Bath has included a six-month rotation in community respiratory medicine during the ST1 and ST2 training years. This job has many elements to it across both primary and secondary care that provide an innovative training experience for prospective GPs.

Aims: This post offers an opportunity for GP trainees to develop a greater knowledge and understanding of respiratory medicine through working at the interface between primary and secondary care.

Methods: The post consists of four main components:

- Specialist clinics: two respiratory clinics/week (3 new patients/clinic) with 1:1 teaching support from a respiratory consultant.
- Ambulatory care: two ambulatory care sessions/week, seeing subacutely unwell patients who can be managed in an outpatient environment.
- Community work: two days/week working with a community-based multidisciplinary team, consisting of nurses and physiotherapists, who manage patients with COPD, bronchiectasis and domiciliary oxygen. The GPST acts as a medical support to the team and provides a link between the hospital and community.
- Hospital in-reach: daily in-reach visits to the hospital to identify COPD patients suitable for early supported discharge and to help complete the national RCP COPD audit.

Conclusion: This GP training rotation differs in that it combines working within both primary and secondary healthcare on a weekly basis rather than traditional hospital rotations that focus only on secondary care and which are currently in use for most GP training programmes in the UK. We feel that this new approach to GP training hospital rotations helps break down the barriers between general practice and secondary care whilst allowing trainees to develop a specialist interest in respiratory medicine with the ultimate aim of creating general practitioners who have the experience to lead respiratory clinics in the community.

Corresponding author: Fiona Simpson

Abstract Number: 69

Wiltshire Community Respiratory support for patients with interstitial lung disease

Authors: Purvis E, Hunn A

Institution: Wiltshire Health and Care

Wiltshire Community Respiratory Team is a small team of 6.2 FTE staff covering North, East and West Wiltshire. It is commissioned to provide respiratory care and a home oxygen service to a population of approximately 253,000 adults and across a rural geographical area of 1,246 square miles in North, East and West Wiltshire.

Referrals from secondary care and interstitial lung disease (ILD) centres for patients diagnosed with ILD have steadily increased over the last year. However, the commissioned service does not reflect this changing service need. In response to this, the respi-

ratory specialist nurses have worked together to address the gaps in care and support provision for all these patients spread over a huge rural area. The team also benefits from having nurses with specialist ILD knowledge and training, enabling them to identify and deliver service improvements for ILD patients across this locality.

This presentation poster will:

- Illustrate how Wiltshire Community Respiratory Team provides a high level of care and support for patients with ILD, whilst sharing care with palliative and community services.
- Provide data identifying the subgroups of ILD referrals received over the past year.
- Highlight the high level of integrated and multidisciplinary team working and the collaboration between primary care and secondary care, palliative care and specialist ILD centres to optimise the support and care offered to these patients in a rural setting.
- Demonstrate that this proactive service can already deliver many elements in the four key principles of care.¹
- Identify areas for further service development:
 - (a) Supporting and the setting up of a Pulmonary Fibrosis Support Group in Wiltshire.
 - (b) Develop a specific pulmonary rehabilitation programme for ILD patients.

1. British Lung Foundation. A Map for Better Care: making effective care pathways for people with interstitial lung disease. September 2017.

Corresponding author: Ella Purvis

Abstract Number: 60

BreathChamps: brightening the future of children with asthma in fun ways

Authors: Henry HL

Institution: Brightness Management

Brief outline on the context: BreathChamps (www.BreathChamps.com) is an initiative developed by entrepreneurial independent Queen's Nurse Heather Henry. It engages communities to increase the herd knowledge of children's asthma. The project has reached the 'beta-testing' phase, so outcomes are not yet available.

Details of the issue(s): BreathChamps is modelled on the Dementia Friends/Champions programme, a cascade learning model. People learn through fun using memorable children's songs, stories, poems, games and crafts.

Analysis of the problem: The NHS struggles to cope with asthma reviews, exacerbations and A&E attendances:

- Workforce numbers have fallen
- Asthma affects not just the child but also families, schools, community groups and neighbours who want to know what to do
- Asthma is therefore a shared problem requiring a shared solution
- Children prefer to learn through play and doing things they enjoy

Strategy for change: BreathChamps democratises health knowledge and makes it into a national social movement. BreathChamps' ideas have been co-produced with communities and clinicians, so tools make sense to all. Group consultations become 'asthma parties'. School assemblies help The Big Bad Wolf puppet (who has asthma!) to blow the Piggies' houses down.

Measurement of improvement: Fun asthma education in schools can improve students' asthma knowledge by 45% in just 20 minutes (AIR charity, 2017).

Wellbeing survey tools are in development derived from the 'What Works for Wellbeing' guide.

Effects of changes: BreathChamps creates wellbeing by offering local people meaning and purpose in their lives (see <https://www.youtube.com/watch?v=2HEgTFXjQag&feature=youtu.be>)

Lessons learned: So far BreathChamps tools have been shared with 569 community members and clinicians.

"Awesome work Heather. Absolutely needs to be recognised and delivered in primary care" (Katherine Parker, Alvanley Surgery)

Messages for others: Community leaders such as Brown Owls, mums and tots leaders, librarians and teaching assistants can become part of the extended respiratory team.

Corresponding author: Heather Henry

Abstract Number: 54

Training community pharmacist teams to offer appropriate management of asthma

Authors: Attar-Zadeh D, Guirguis A, Heading CE, Shah U, Bancroft S

Institution: London North West Local Practice Forum of the Royal Pharmaceutical Society

Context: A COPD project undertaken by community pharmacists in NW London in 2015 illustrated how high-value interventions could be delivered. NHS RightCare is now utilising those findings and materials as a case study. A comparable asthma-specific study is now in development, with an initial collaborative stage of designing a focused training package for pharmacists.

Problem: Many asthma patients have a poor understanding of the role of different inhalers for managing their condition optimally. In particular, there is an over-reliance on short-acting beta agonists (SABAs).

Assessment and analysis: A new training pack, including an 'Asthma Right Care' tool to help pharmacists change patient behaviour has been designed. It is undergoing testing with community pharmacists in London.

Strategy: Community pharmacists see asthma patients frequently in a context of medication discussions. They are in an ideal position to show patients how to modify their behaviour and thereby improve control of their condition. New tools can facilitate this.

Measurements: Effectiveness of the training pack is assessed using pre- and post- training questionnaires, with a key measure being change in awareness of the relationship between the number of SABA inhalers prescribed per year and the number of breathless episodes experienced by a patient each week.

Changes: In spontaneous and structured feedback from the 2015 COPD project, pharmacists reported that the training received improved their understanding of key indicators of medication-related respiratory management. Early signs are that similar improved understanding can be achieved with the asthma training pack, but further testing is needed.

Lessons: The value of time spent by community pharmacists supporting patients in the management of COPD has already been established and benefits identified from focused training of pharmacists.

Messages: It is expected that the current training programme being developed will prepare pharmacists to provide behaviour-changing support to asthma patients visiting their pharmacies.

Corresponding author: Christine Heading

Abstract Number: 41

The Morecambe Bay Respiratory Network: integrating from the ground up

Authors: Haslam P, Gatheral T, Atkinson G

Institution: Morecambe Bay CCG

In Morecambe Bay we have developed our own integrated respiratory service – the Morecambe Bay Respiratory Network (MBRN). QOF data have highlighted a higher than average prevalence of both asthma and COPD. NHS RightCare data identified higher than average non-elective admissions, spend on prescriptions and bed-days.

Practices within Morecambe Bay CCG are grouped into 11 GP-led Integrated Care Communities (ICCs) which bring together local health and care organisations. The MBRN has been structured around these ICCs. The guiding principle has been to develop an integrated model of care which can have a profound impact on all patients from diagnosis to end of life by focusing investment on primary care.

Method: In the initial phase of the roll out (October 2017 to July 2018), five of these ICCs were provided with funding to develop ICC respiratory teams. These teams could then focus on the implementation of common diagnostic pathways, facilitating early review of complex or deteriorating patients and in-house referral pathways to reduce referrals into secondary care. Monthly Respiratory MDT's were then attended by the ICC teams, respiratory consultants, specialist nurses as well as physiotherapists and pulmonary rehabilitation teams.

Findings: Initial data found that there has been a 54% reduction in referrals to secondary care from the ICCs involved (non-2-week wait patients) as well as consistently positive feedback from patients. An independent assessment by the University of Cumbria has highlighted the strong support for this model of care from all staff involved so far. Work continues to standardise pathways and protocols across the CCG, increase community provision, develop an online respiratory dashboard and then towards a full hospital at home service.

Conclusion: Integrating care from the ground up, based around primary care with regular access to specialist input, is having a significantly positive impact on patients and staff within the whole healthcare system.

Corresponding author: Patrick Haslam

Abstract Number: 24

A review of the delivery of education to healthcare professionals in the Mission ABC project

Authors: Heiden E, Longstaff J, Chauhan AJ

Institution: Portsmouth Hospitals NHS Trust

Introduction: The importance of high-quality healthcare professional (HCP) education and training has never been greater. With ever-increasing demands on the NHS workforce to see more patients with complex medical conditions, the need for busy staff to undertake continued professional development means HCP education has a greater need in a highly time-pressurised environment.

Background: The Mission ABC (MABC) project was a novel, specialist-led, multidisciplinary approach to delivering respiratory care in the community. It was a priority that secondary care respiratory expertise remained in GP surgeries following completion of the project and that educational activities were accessible and relevant for all HCPs in primary care.

Methods: A Training Needs Analysis (TNA) was developed for all HCPs attending MABC clinics in order that their individual educational needs could be identified and addressed. HCPs attended Mentorship Clinics, where they followed patients on their journey as they were reviewed by the multidisciplinary specialist team. HCPs were also invited to attend education events which reflected the structure of the clinics and provided multidisciplinary respiratory teaching. TNAs were analysed to identify common themes which, combined with feedback from the Mentorship Clinics, influenced the content of the educational events.

Results: All the educational activities were well attended by a wide variety of HCPs and self-reported understanding and confidence to manage respiratory conditions subsequently improved. The educational needs of primary care HCPs were addressed and many requested further learning opportunities in their feedback: "I learned more from this morning than from all the other respiratory updates I've attended in recent years put together".

Lessons learned: HCPs benefit from inter-professional education which can be effectively delivered in clinical and non-clinical environments by the multidisciplinary team. Utilising a TNA can help direct continued professional development.

Conclusion: Novel approaches to education can benefit both HCPs and patients and should be encouraged.

Corresponding author: Emily Heiden

Abstract Number: 33

Retrospective multi-practice audit identifying sub-optimal uptake of high value interventions within COPD patients at risk of hospitalisation

Authors: Anderson A, Canavan M

Institution: Respiratory Care Solutions

Introduction: Leeds has one of the highest admission rates and some of the poorest outcomes for chronic obstructive pulmonary disease (COPD) in the country. We aimed to identify gaps in current care provision for COPD patients in primary care, who have been identified at high risk of exacerbation and hospitalisation, to inform and prioritise care against high-value interventions.

Methods: We virtually reviewed 200 patient records from across 11 GP practices in Leeds, auditing the use of high-value interventions. The audit included patients who had two or more exacerbations in a year.

Results: From 200 records, we found that there were low rates of high-value interventions. 23% did not receive flu vaccine, 53.5% continued to smoke with 5.5% recorded as never smoked, 2% had completed pulmonary rehabilitation, 43% were on triple therapy, 43% had moderate disease and 20.5% had potentially the incorrect diagnosis. There are also issues with anticipatory medication on repeats. Audit findings were presented and discussed at a multidisciplinary meeting which included the Clinical Commissioning Group, secondary care and community respiratory team in Leeds.

Discussion: This audit identified that there are issues with correct diagnosis of COPD patients in primary care, the same as the Na-

tional COPD Audit (2017). Of those correctly diagnosed, this audit identified that moderate disease patients are the group that are exacerbating more frequently with no specialist input. A focus towards this cohort of patients should be considered. It is evident that there is low uptake of high-value interventions. It is up to the commissioners to use this data to inform decision-making surrounding the provision of care and services within primary care if they would like to see a reduction in exacerbations and hospital admissions alongside improving outcomes for COPD patients in Leeds.

Corresponding author: Melissa Canavan

Abstract Number: 63

Implementation of local guidelines into a population of COPD patients: 'Going for GOLD' – a real world experience

Authors: Rowlands S-J, Dobson L, Roberts I, Roberts J

Institution: South Devon and Torbay Clinical Commissioning Group

Prescribing in chronic obstructive pulmonary disease (COPD) has not kept pace with advances in evidence or Global Initiative for Chronic Obstructive Lung Disease (GOLD) strategy recommendations, evident in high inhaled corticosteroid (ICS) prescribing, frequently at high doses, and low dual bronchodilator uptake. Implications include high primary care drug spend and lost opportunities to improve patient outcomes (reduced symptom burden and exacerbation rate, reduced harm from ICS adverse effects) and reduce non-elective activity and spend in primary and secondary care. Barriers to optimal prescribing include confusion amongst physicians caused by the plethora of treatment options. Two respiratory consultants and CCG Medicines Optimisation Team developed local prescribing guidance based on GOLD, then piloted its implementation and measurement of change method in two GP practices.

Method: Seven consultant-led education events attended by 177 local GPs and nurses described implementing the prescribing guidance alongside holistic best practice, diagnostics including co-existing asthma and unindicated ICS withdrawal. Primary care undertook face-to-face 'Going for GOLD' reviews for 4,420 patients (total COPD population 6,200) alongside routine care in <18 months supported by a work plan and package of paper, human and IT resources with excellent consultant leadership.

Results: Outcomes achieved between August 2016 and February 2018 include: £256k net savings (75% in year), LAMA/LABA uptake increased from 9.4 to 130 items/month/1000 patients, reduction in high-dose ICS from 53rd to 9th percentile nationally (26.3% to 16.0%), 217 undertreated patients offered treatment (cost £79k/year), formulary compliance increased 26.4% to 60.3%. Evaluation continues for longer-term outcomes (eg, exacerbations).

Conclusion: We describe advantages of 'Going for GOLD' over traditional medicines management work and share our experiences of embedding guidelines and medicines optimisation principles into routine COPD care for the benefit of patients utilising an approach replicable at both GP practice and CCG-wide levels which encompasses multidisciplinary work at pace and scale, focused on quality whilst delivering significant cost savings.

Corresponding author: Sarah-Jane Rowlands

Abstract Number: 21

Free inhaled corticosteroids in asthma: do they really work?

Authors: Longstaff J, Dominey R, Turner C, Chauhan AJ

Institution: Portsmouth Hospital Trust

Introduction: Making prescription charges exempt for people with asthma is a key policy for Asthma UK. The service evaluation project provided free steroid inhalers for a year as an incentive to people with poorly controlled asthma who pay for their prescriptions, alongside asthma reviews, to improve their quality of life and asthma control.

Method: An expression of interest letter was sent to loW practices. Each practice aimed to recruit 20 patients. Patients attended structured practice asthma and local pharmacy reviews in return for free steroid inhalers.

Result: Two loW practices were enrolled (population of 22,900). 188 patients were identified and 107 were approved by the practice. 23 patients were recruited and 8 attended one follow-up appointment. No patients completed the project. Data from 96 patients were analysed 12 months after project completion. Short-acting beta agonist (SABA) usage decreased in the recruited group compared with the non-recruited group; however, inhaled corticosteroid usage, exacerbation rates, OOH and unscheduled GP visits decreased in both groups.

Discussion: Difficulties with identifying patients who paid for prescriptions resulted in the low recruitment numbers despite various recruitment methods. High turnover of project staff caused delays to project deliverables. Gaps in the delivery of care resulted in patients not receiving action plans or inhaler technique checked. Patients recruited to the project appear more in control of their disease than those who did not attend, evident by the reduction in SABA use, numbers of exacerbations and unscheduled GP visits.

Conclusion: A small number of patients were recruited and retained. They were not fully motivated to attend the project, adopt lifestyle and health changes. Offering patients free steroid inhalers and regular asthma reviews is inconclusive as an effective incentive to maintain good asthma control.

Corresponding author: Jayne Longstaff

Abstract Number: 37

The use of inhaled corticosteroids (ICS) in COPD: are patients being prescribed ICS unnecessarily?

Authors: Carnegy AJA, Hamilton J, Moran HV

Institution: University of Birmingham

Inhaled Corticosteroids (ICS) help prevent COPD exacerbations (1) However, their well-known side effects should be considered and discussed with patients (2). NICE specifies that only patients with severe airflow obstruction (FEV1% predicted <50) or frequent exacerbations (≥ 2 a year) be prescribed ICS/LABA (3). GOLD 2017 stratifies patients on symptomology and exacerbation risk instead of quantitative airflow obstruction, using their ABCD classification, to reduce ICS overuse (1).

This audit explored ICS use in COPD patients at a GP practice in Dudley, West Midlands with a list of 6044 patients. Electronic patient data was searched for patients with a formal COPD diagnosis and FEV1% predicted >50. A range of data was collected

including medication and exacerbation history. 115 patients have COPD (2% of the list) and 81 have an FEV1%predicted >50. 38 patients were prescribed ICS in the past year. However, only 8 of these patients have ≥ 2 exacerbations a year, suggesting the overuse of ICS in the remaining patients. 23 patients are also on unlicensed inhalers for COPD. Some patients also had a diagnosis of asthma which can co-exist with COPD (4), whether these patients benefit from LABA/ICS could be assessed. New GOLD guidance suggests using LABA/LAMA over LABA/ICS in exacerbators which could help to reduce the number of patients on ICS (1). This audit suggests that ICS may be prescribed unnecessarily and in incorrect doses and recommends using current GOLD guidance to reduce this.

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Corresponding author: Alasdair Carnegie

Abstract Number: 14

IMPACT: the next steps

Authors: Freeman D, Gerrard V, Turton J

Institution: Norfolk Community Health & Care

Following on from the IMPACT project (Improving the Management of Patient Assigned COPD Treatment) undertaken in North Norfolk CCG, a primary care-based respiratory service was designed and implemented. The need for this was based on a three-fold difference between COPD admission rates across practices within the CCG. It was felt that any improvement in the variability should be focused in primary care and a service was set up to be run primarily by D Freeman (DF) and V Gerrard (VG). The service had two phases: a practice visit identifying the train-

ing levels of healthcare professionals delivering the service, discussing with practice managers, admin staff and where relevant dispensers, how their roles could be used in identifying patients who may require referral to the service, and then a mentored clinic with the Practice Respiratory Leads.

The second phase was a series of practice-based clinics run by DF and VG, seeing patients referred by the Practice Respiratory Leads. The Practice Leads were encouraged to refer patients who had been admitted to an Acute Trust, who had been seen in A&E, seen by OOH, seen by the Ambulance Service or who had had two or more exacerbations in the previous 12 months. The Practice Respiratory Leads were encouraged to attend the clinics too as an ongoing mentoring and educational process. Each practice gave the visiting clinician access to their clinical computer system and notes were made co-temporaneously in the GP record in order to ensure that recommendations were carried out and that the Primary Health Care Team could see – not only what had been done – but why.

The primary outcome important to the CCG was a reduction in admissions. This was demonstrated in the practices visited on a regular basis where not only a reduction in admissions was seen but a cost saving.

Sadly the CCG decided that the service should be terminated mid 2017. This was as a result of the repeated concerns of the clinicians over the lack of IT and admin support leading to a large degree of clinical concern. Had the service been set up with full support – as had been originally suggested – it would have continued.

Both clinicians are very experienced and had repeatedly voiced their concerns over the way the overall support for the service had been designed. It was felt that, should the process be repeated, it would be imperative that the implementation should include full IT and admin support. The Norfolk & Waveney STP has a Respiratory Working Group which is looking at providing a similar project across the entire STP footprint.

Corresponding author: Daryl Freeman

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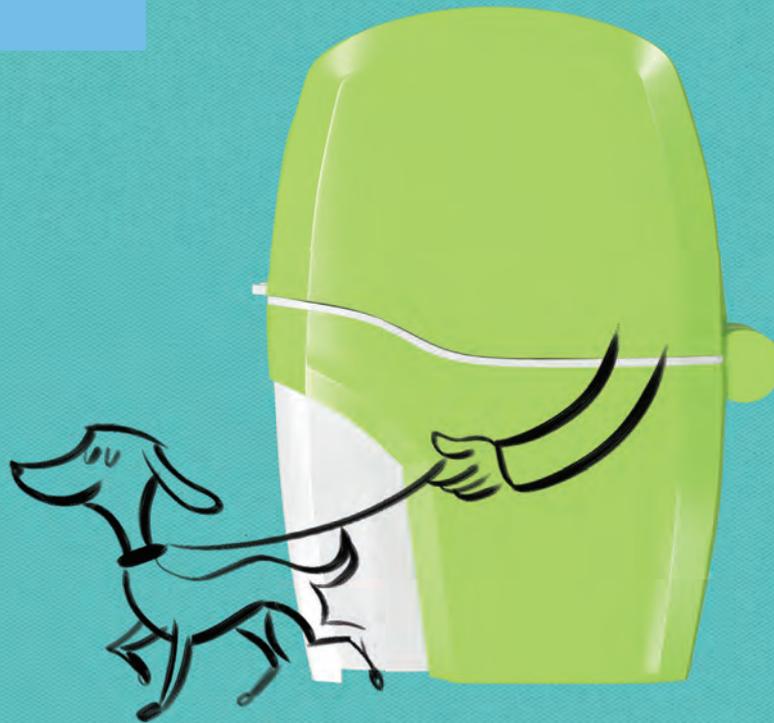
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