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Making exercise for breathless people work

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Introduction

The significant benefits of regular exercise in improving people's health has led to exercise becoming a key treatment for a wide variety of health conditions. This is particularly the case in people with chronic respiratory conditions and chronic heart failure (HF) with rehabilitation for both these patient groups being an integral part of their care.

There is ample high quality research which shows pulmonary rehabilitation (PR) and HF rehabilitation (HFR) programs produce significant improvements in exercise capacity and health related quality of life (HRQoL) for both chronic respiratory and HF patients whilst also reducing hospital admissions. Both pulmonary and HF rehabilitation programs are recommended in current national and international guidelines and should be a key part of the management of a patient's condition.

Background to integrated "breathlessness rehabilitation"

People with chronic respiratory conditions, in particular chronic obstructive pulmonary disease (COPD), and people with HF often suffer from and present with very similar symptoms. Exertional breathlessness, general fatigue and specific lower limb fatigue are common symptoms in both diseases. Both COPD and HF patients often become less physically active to avoid experiencing these symptoms leading to physical deconditioning and a further worsening of their symptoms. This reduction in activity and worsening of symptoms can then lead to a loss of confidence, depression, increasing anxiety and social isolation. Whilst pharmacological treatments may help to relieve these symptoms the ideal treatment for these patients is exercise and attending a rehabilitation program.

People with COPD and heart failure suffer from breathlessness, general fatigue and specific lower limb fatigue leading to physical deconditioning, loss of confidence, depression, increasing anxiety and social isolation

There are also secondary systemic manifestations in both COPD and HF which contribute to exercise limitation and poor prognosis namely skeletal muscle dysfunction. There is a reduction in muscle mass, strength and endurance in both diseases contributing to exercise intolerance. However, these skeletal muscle changes are partially reversible with exercise training again emphasising the importance that both COPD and HF patients should attend a rehabilitation program.

Traditionally HF patients have attended cardiac rehabilitation (CR) programs but these services can have more of a bias towards younger, fitter non-symptomatic post-MI and post-cardiac surgery patients rather than the older, chronically breathless HF patient. Therefore, due to the above similarities in symptoms between COPD and HF patients, HF patients may be more suited to the PR model of rehabilitation.

Only a small proportion of heart failure patients actually attend cardiac rehabilitation and currently in the England, Wales and Northern Ireland <5% of patients who undergo cardiac rehabilitation had a primary diagnosis of HF. [1]

A study has shown that combining PR and HFR into one program is effective in improving exercise capacity and HRQoL in a hospital and research setting.[2] In this study both COPD and HF patients followed a traditional PR program (7-week, twice weekly 2-hour sessions of cardiovascular and strengthening exercises and education) with COPD and HF patients exercising together in one group. Both patient groups achieved similar improvements in exercise capacity and HRQoL as each other and similar to what has been previously reported in the literature for disease specific programs.

This study highlights and confirms that it is feasible and effective to integrate COPD and HF patients into one rehabilitation program using the PR model as a basis for it.

How and why the integrated pulmonary and heart failure rehabilitation service was developed

An expansion of the community HF specialist nursing service led to an increased demand for patients requiring HF rehabilitation. There was

previously no community HFR provision locally and HF patients had to attend the hospital based cardiac rehabilitation service run by the acute trust. This created an opportunity to develop a business case and approach local commissioners about potentially commissioning community HFR as part of the well-established community PR service to develop an integrated community PR and HFR service.

The business case developed included a review of the evidence of the effectiveness of both PR and HFR and the clinical evidence behind integrating the two. It also included how an integrated program could be more cost-effective and achieve economies of scale as approximately 20% of patients have both COPD and HF [3] so may get referred to and attend both a PR program and a HFR program. It also highlighted how integrating HF patients into the existing community PR service may help to increase capacity within the local cardiac rehabilitation service. The final part of the business plan highlighted the impact PR and HFR has on reducing hospital admissions in the patients who attend the programs.

Following the presentation of this business case to commissioners it was agreed a 12-month pilot of integrated community PR and HFR would be commissioned to investigate whether it was feasible, effective and safe. The long term prospects of this service would then be reviewed after the completion of the pilot period.

Integrated rehabilitation service design

Prior to commencing the 12-month pilot all staff in the community PR team received training from the community HF nurse specialists on the general management of HF patients. All of the staff (a combination of physiotherapists and physiotherapy technical instructors) were experienced in delivering community based PR and managing severely breathless patients during exercise but identified specific learning needs in the pharmacological management of HF and what to look out for and monitor when a patient is experiencing an acute decompensation of HF.

The integrated PR and HFR service was based on and run in accordance with local protocols for the community PR programs. The inclusion criteria for the service was a confirmed diagnosis of COPD and a MRC Dyspnoea score ≥ 2 or a confirmed diagnosis of heart failure and a NYHA Score ≥ 2. The exclusion criteria was any unstable cardiovascular condition and any co-morbidity which would limit a patient's ability to exercise.

Inclusion criteria for the service

- **Confirmed diagnosis of COPD**
- **MRC Dyspnoea score ≥ 2**

OR

- **Confirmed diagnosis of heart falure**
- **NYHA score ≥ 2**

Five integrated rehabilitation programs were delivered during the 12-month pilot in three different geographical locations. These five programs were run as 10-week block programs with a 3-week period of initial assessments followed by the 6-week class and then 2-weeks of discharge assessments.

All patients accepted on to the integrated rehabilitation program attended for an initial assessment to review their medical history, medications and impact their symptoms have on their daily life. Patients then completed the Incremental Shuttle Walk Test (ISWT) and Endurance Shuttle Walk Test (ESWT) which were carried out in a standardised manner.[4] Patients also completed a quality of life questionnaire either the Chronic Respiratory Questionnaire (CRQ) or the Chronic Heart Questionnaire (CHQ) and then also the PHQ9 and the GAD7 Questionnaires.

Following this assessment patients undertook a 6-week community based integrated rehabilitation program of twice weekly 2-hour sessions made up of 1-hour of exercise followed by a 1-hour educational session. During this program patients underwent a supervised exercise program of walking (at an individually tailored speed calculated at 85% peak O2 consumption from their ISWT result), exercise bike cycling and upper and lower limb strengthening exercises using free weights. During the exercise class there was no ECG monitoring or continuous telemetry of the HF patients. Alongside the two supervised exercise sessions patients were expected to complete a daily unsupervised walk at home at their calculated walking speed and also complete one further session of strength training at home. Both COPD and HF patients exercised together as one group and were supervised by the same staff using a staff to patient ratio of 1:8.

The education sessions delivered are detailed in Table 1. The patients had generic and combined group education sessions for the majority of the sessions but separated into two groups for the medications and managing flare-ups sessions. The education sessions were predominantly delivered by physiotherapists but a specialist COPD or HF nurse delivered the medications and managing flare-ups sessions with a dietician delivering the diet and cardio-respiratory conditions session.

Table 1 - Education sessions delivered on the integrated rehabilitation programs

Disease education	Energy conservation
Benefits of exercise	Diet and cardio-respiratory conditions
Managing breathlessness	How the heart and lungs work
Medications	Managing flare-ups
Chest clearance	Rehabilitation - What next?
Managing anxiety and relaxation	Quiz and Q & A session

The integrated rehabilitation programs were held in a variety of community venues including community centres, leisure centres and church halls.

After completing the 6-week program patients attended for a discharge assessment to repeat the previously documented outcome measures and to create an action plan to continue with their exercise.

Integrated rehabilitation service outcomes

Overall 79 patients (42 COPD; 37 HF) were recruited to five integrated rehabilitation programs across the 12-month pilot. 63 patients completed the program with the drop outs mainly due to acute exacerbations of COPD or decompensation of HF and which were split equally between COPD and HF patients. No adverse events occurred in any of the integrated rehabilitation programs during the 12-months pilot.

There were significant improvements in both ISWT distance ($p < 0.001$) and ESWT time ($p < 0.001$) from initial assessment to completion of the integrated rehabilitation program. There were also significant improvements in HRQoL ($p < 0.001$) and significant reductions in anxiety and depression ($p < 0.05$) in patients who completed the program when compared to their baseline scores. The improvements for both exercise capacity and HRQoL were similar for patients with COPD and HF. The improvements seen were comparable to the results produced by disease specific rehabilitation programs.

Patient satisfaction and feedback for the integrated rehabilitation service was very high with no concerns or disadvantages reported from patients about attending a mixed disease rehabilitation program rather than a disease specific one.

Patients had no negative comments on the combined, generic education sessions but did appreciate the separate medication session.

These clinical results and the patient feedback were then fed back to the commissioners following the completion of the 12-month pilot.

The integrated PR and HFR service has now become a fully commissioned service in the community and the programs are ongoing.

Conclusion

This 12-month pilot integrated PR and HFR service has shown it is feasible and safe to deliver it in the community and that integrated programs can be as effective and achieve similar improvements in exercise capacity and HRQoL as disease specific ones. It highlights integrating COPD and HF patients into a joint rehabilitation program does not have a detrimental impact on the potential outcomes and benefits patients can achieve with attending a rehabilitation program.

Learning Points

- Early engagement with commissioners was key to making this integrated rehabilitation service a success - Go and identify your local commissioner(s) who manages or leads on respiratory and/or heart failure community services. Arrange a meeting with them to discuss rehabilitation and use this opportunity to make them aware of the significant benefits PR and HFR bring about not only for patients but also for the local health economy.
- Utilise your local HF specialist nursing team whether this be community or secondary care based. They were essential in helping to develop the educational component of this service and they will often have experience of working in HFR programs. Again early engagement with the HF specialist nursing team was crucial in this services success as they were the largest referrers to the service.
- Existing community PR teams have the skills and experience of managing, often severely, chronically breathless patients during exercise sessions so incorporating other long term conditions where breathless is a major symptoms into rehabilitation programs is feasible and safe but do identify any training needs your team may have and arrange appropriate training.
- Network locally with other PR providers to share best practice and ideas on integrating PR and HFR. If you are having difficulties establishing integrated PR and HFR they may have a solution for the problem/barrier you need to overcome and vice versa.
- Visit and work closely with GP practices to promote your rehabilitation services and help them identify which patients would be suitable for rehabilitation.

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PCRS-UK Respiratory Clinical Leadership Programme 10th anniversary

The PCRS-UK Respiratory Clinical Leadership Programme is celebrating its 10th anniversay. To mark this milestone we are highlighting how some of the programme's alumni are using the skills they have learned to improve patient care.

Debbie Roots, respiratory nurse specialist lead of a hospital based team, says key skills she has learned are how to engage with stakeholders and develop a business case. Debbie has gone on to put forward business cases to develop respiratory teams and services including setting up pulmonary rehabilitation classes.

She has also taken on more challenging leadership roles including promotion to nurse consultant, becoming a member of the London Respiratory Network and co-chair of the London Oxygen Network. 'I wouldn't have had the courage to take on these roles without the support of the Respiratory Clinical Leaders Programme. I am now able to lead confidently and continue to work nationally and locally to develop respiratory services. Being part of the programme has been invaluable in developing both my skills and confidence,' she says.

Deirdre Siddaway, respiratory nurse specialist and GP practice respiratory lead, has learned how to influence people, manage conflict and plan a project. These skills, combined with support and advice from workshop leaders, equipped her to make the case for her CCG to commission a six month pilot between primary and secondary care to improve patient care, reduce outpatient waiting times and prescribing costs. 'I had been trying to engage commissioners for some time to raise the profile of the management of respiratory patients. The workshops helped me to target the right people, find the levers to encourage them to listen and to engage those who were influential,' she says.

Ruth Thomas, community respiratory nurse team leader has improved care in her area by putting forward business cases for increasing pulmonary rehabilitation services, improving COPD exacerbation care and updating COPD and bronchiectasis self-management plans. 'All of this has been made possible by the skills I learned and the support I received from the programme,' she says.

Carla Astles began her career as a practice nurse and is now working as a respiratory nurse specialist nurse educator for Southampton's integrated COPD team and as a trainee advanced nurse practitioner in general practice. She is also a Wessex CLAHRC (Collaboration for Leadership in Applied Health Research and Care) nurse involved in developing a service for improving respiratory care within a primary care setting by undertaking, applying and implementing world-class applied research for patient and population benefit.

Carla says the workshop taught her about the concept of doing 'the work before the work' when developing a project. She had previously adopted the attitude of 'just get on with it and see if it works'. She learned that while this may be appropriate for a smaller scale initiative it makes evaluating a project or a change in practice challenging and could reduce the potential for upscaling or sharing practice. 'Much of the work I have done in the last few years requires forward planning and evaluation which I felt better equipped to manage after attending the workshop. The skills I learned also boosted my confidence as a contributing member of a working group looking at service development,' she says.

A commissoner and respiratory clinical lead for her CCG, GP, *Dr Adedayo Kuku*, joined the programme because she was keen to develop and improve both her professional and leadership skills.

'Each session I have attended has been very inspiring and empowering. The workshops have equipped me with the tools I need to turn most of my great ideas into reality. They improved my project management skills and my professional self confidence. I have learned to be clear about the aims and scope of a new project, how to involve key players and

Nurses inspired to aim high

Melissa Canavan and her colleague ***Sarah Anderson*** were inspired to set up a social enterprise in Leeds after attending the Respiratory Clinical Leaders programme.

First they launched the Leeds Respiratory Network in 2013 to provide educational meetings for local healthcare professionals, followed by their social enterprise in 2015. This year they achieved their aspiration of securing a contract with a collaboration of GP practices for their social enterprise to standardise respiratory care and improve outcomes.

The leadership workshops gave Melissa and Sarah the confidence to pitch for funds and business support from two local community foundations, contract a solicitor and an accountant and open a bank account. They also learned how to liaise with commissioners and pitch a business case.

From working as a practice nurse Melissa has gone on to work as a hospital respiratory specialist nurse, present at the Primary Care Respiratory Academy and lead sessions at the annual Affiliated Group Leaders meeting. Earlier this year she was invited by NHS England to talk about her social enterprise at the national GP Forward View conference.

'The Respiratory Clinical Leaders Programme has given me new skills such as understanding how to use data, make a case for change, engage stakeholders and why it is important to have a mission and values. The workshops made me realise that there are opportunities out there and that you can influence the system and improve patient care. If it wasn't for PCRS-UK none of this would have happened,' she says.

stakeholders to effect change and how to share my plan with them and communicate more effectively using learned negotiating skills.

'I now feel able to manage difficult situations and people in my role as clinical lead of a new practice. The programme has taught me how to be reflective and how to understand the perspective and interests of others and has given me an insight into my leadership style and how to use it more effectively.'

Dr Steve Holmes, GP trainer, clinical commissioner, researcher and practice respiratory lead, who teaches in the workshops says: 'Leadership and communication skills are underrated. The more I understand and practise these skills the better I get. I have been able to improve patient care by learning and listening to others and helping to change systems.'

Clare Cook, physiotherapist and co-lead of the programme, says the leadership skills she has learned have helped her too as clinical lead for respiratory services at Bristol Community Health, to develop and expand services at the social enterprise. She says: 'The time spent away at the Respiratory Clinical Leaders meetings has helped me reflect on my goals as a team leader and learn from peers across the country in similar positions. This has boosted my confidence and understanding of the respiratory community and has enabled me to be a more rounded professional and in turn deliver better patient care.

'The workshops have introduced me to project management in a practical and useful format, giving me templates and processes for planning projects and service development in the work place. They have also helped me to improve on skills such as reading academic literature understanding national policies and better understand the structure of health services. It is great to attend such high quality training which is free for members of PCRS-UK.

'The diversity of practitioners who come to the meetings means I always learn something new and feel enriched by spending time with people who are all striving to make steps to progress services for respiratory patients.'

Dr Stephen Gaduzo, co-lead of the programme, says: 'The programme is about enhancing your natural leadership expertise and nurturing the skills that you may not even realise you have, so you can improve care for more than the individual patient sat in front of you.

Stephen, who went to the first workshop in 2007, says the programme gave him the confidence to present at meetings, become part of the North West Respiratory team and eventually PCRS-UK Chair. 'I would say to anyone who is, or maybe (even reluctantly), a respiratory lead of any description or magnitude, come along. It's free, due to a big investment in you by PCRS-UK. It's fun, supportive, and who knows where it might lead.'

A doctor inspired to lead an integrated team with patients at the centre

Dr Helen Ward, consultant respiratory physician, New Cross Hospital, found the support of the Clinical Respiratory Leaders Programme invaluable when, six months into her promotion to consultant, she took over as lead of a new respiratory action network in Wolverhampton.

This initiative had been set up by her predecessor, Dr Lee Dowson, to integrate services and move respiratory care closer to home. It has been taken in new directions under Helen's leadership.

The RAINBOW group (Respiratory Action Network for the benefit of Wolverhampton) pulls together all the respiratory leads from primary, community and secondary care and a CCG representative for regular meetings to discuss respiratory matters.

Developments include:

- Multidisciplinary team meetings held every fortnight to discuss patients with chronic respiratory conditions.
- Respiratory hospital outpatient treatment clinics to prevent admissions. These clinics provide a single point of access for patients with any respiratory problem who a healthcare professional is concerned about and may need admission to hospital.
- Respiratory in-reach into the Acute Medical Unit where a consultant is available seven days a week to provide a specialist opinion for patients with acute respiratory problems. A nurse completes discharge bundles and coordinates early supported discharge for respiratory patients.
- Rapid intervention team, a senior community nursing team available seven days a week to assess, do observations and prescribe, providing crucial support to help keep unwell patients at home.
- Helen ran joint community clinics for a while in GP practices to engage with practitioners and boost practice nurse respiratory skills.
- She now does a monthly joint palliative/respiratory clinic at the local hospice with one of the palliative care consultants with patients with end stage respiratory disease.

Since setting up these services, hospital admissions, readmissions and length of stay have been reduced for COPD patients. Joint working across primary and secondary care has resulted in shared learning.

Helen explains that the key to the success of this initiative has been the importance of good communication. Each sector now appreciates and understands each other's workload and pressures and are able to share frustrations and ideas for solving problems. 'You have to be politically sensitive and aware of the bigger picture when working across healthcare sectors like this. Communication is probably the most important aspect of working together, it is about building relationships and building trust. If you build trust, people will come and talk to you. If people don't communicate with each other then integrated working is never going to happen. This is the way forward - everybody working together with the patient in the centre.'

Helen says the Respiratory Clinical Leaders Programme equipped her with the skills and confidence to make things happen. 'The workshops teach you how to develop yourself as leader in that they give you the tools for internal reflection, how to lead people, how to work as a team and how to deal with challenging people. You also learn practical skills on topics such as developing a business case and understanding your target audience.

'Crucially the programme gives you networking opportunities to meet others who are going through similar experiences. Communication is key. It's about giving people support who haven't got much confidence and to say - you can do it. The programme provides people you can go to if you are unsure about what you are doing or want reassurance.

'I've grown in confidence as I've gone along. What has helped me is being able to identify a group of primary care leaders that I can go to who think that what I'm doing is right and who give me support. The Respiratory Clinical Leaders Programme has opened up another group of people that I can rely on for a GP or primary care perspective or reassurance,' she says.

Respiratory leadership development programme

Bringing about change in practice: secrets for a successful project

How long have you been trying to get a project underway? Whether the project is bringing about a change in your practice, to support your own professional development or to encourage service improvement across a locality - and no matter how big or small the project is or what your level of experience is - this workshop, is for you!

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Inspiring best practice in respiratory care

Surviving and thriving in challenging times: Annual Affiliated Group Leaders meeting

Fran Robinson PCRS-UK Communications Consultant reports on the recent PCRS-UK Affiliated Group Leaders Meeting held on 28th September 2017

Managing stress and looking after both yourself and your local group was the theme of the Affiliated Group Leaders Workshop held at the Telford International Centre in September.

'The NHS is changing, it's a really stressful place to work, the line between work and home has become blurred and life in general is fast paced. So it is time we all stopped, reflected and acted on what is going on with our lives and took some time out for ourselves in this world that is driving us all to distraction. Sometimes it is important to just breathe and be,' said Carol Stonham, Primary Care Respiratory Nurse, Gloucestershire CCG and PCRS-UK Vice Chair, introducing the workshop.

The event covered:

- How to plan for the success and longevity of your group
- Reasons to be cheerful: an optimistic vision of primary care for the future
- Mindfulness: learning how to relax

Planning for the success and longevity of your group

Mel Canavan, a respiratory nurse specialist and co-founder of the Leeds Respiratory Network, explained how she had set up an education committee to share the workload and responsibility of running her group.

She and her colleague, Sarah Anderson, who she co-founded the Leeds Respiratory Network with, first sent out an email to everyone in the group inviting anyone who was interested in helping to form an education committee to come to a meeting.

A small group of nurses turned up. 'They all felt quite sheepish when they first attended and in turn we were honest with them saying this is the first time we have done anything like this but let's give it a try. And that is how it started,' said Melissa.

Now the group meets two or three times a year and over a meal they plan the agenda for their meetings. 'When we first met we were all a bit shy and nervous but coming to the meetings and working together and sharing ideas to make a success of the network, we have all now bonded as a group and become friends. It has worked because we are a group of like-minded people passionate about improving respiratory care.

'The role is voluntary but everybody has gained in confidence and have all negotiated pay rises or moved on to new jobs. I have really enjoyed nurturing people on the committee. We are now friends for life and there are plenty of people who are now investing in securing the long term future of the network,' said Melissa.

How an education committee can support your local group

- **Committee members will share ideas and jointly steer the professional development of the group**
- **The committee will share the workload**
- **It will lead to succession planning and the long term survival of the group**
- **Members can celebrate successes**
- **And support each other if the going gets tough**

Carol says: *'If you say to somebody, can you come and help me run the group, please, because I can't do it all on my own? – that isn't a very appealing idea. But if you say, I really want set up an education committee and I need the help and advice of bright and interesting people around me - that sounds like a much more attractive proposition and is likely to help you to recruit your volunteers.'*

Other tips for ensuring the survival of your group:

- Issue reminders to encourage people turn up.
- Make the meeting relevant to the audience, give it a snappy title and tell people what they will learn
- If people fail to turn up email them and explain that although the meeting was 'free' their meal cost X amount, paid for by the sponsors, and that they have taken the places of other people who wanted to come.
- Explain to non-attenders that if they don't come it could result in the group not getting any sponsors in the future
- Charge a deposit which will be returned when people turn up
- Email people after the session with a brief list of bullet points about what they missed, to entice them to come to the next meeting

- Consider the value of a multidisciplinary group
- Set up a closed Facebook or messaging group, such as What's App, to communicate with members
- Send regular emails with news about respiratory developments to create a sense of community

Reasons to be cheerful

PCRS-UK Chair Noel Baxter said although the NHS environment was currently relatively hostile there were still many reasons to be optimistic and cheerful about the future.

'*It's very easy in general practice or community care to be around very negative conversations all the time. But if you keep going, keep edging forward and improving a bit further, as Mel has done in setting up the Leeds Respiratory Network, you will get there in the end.*'

Noel said that when he sat on interview panels he was always really interested to find out from candidates what got them up in the morning.

He said one of the things that motivated him was being part of a team and realising how valuable supporting the team was: '*It is so important to make your team feel positive because then you will want to come back and work with them every day.*'

Other reasons for getting up contributed by group leads at the meeting ranged from 'working in an environment where we all talk to each other'; 'doing a small thing in a great way'; 'seeing that lightbulb moment when you are teaching someone'; 'making a breakthrough with somebody such as helping them to stop smoking' and 'realising that what you say as a clinician to a patient can have a positive impact'.

Noel went on to say that he could think of many reasons to be optimistic about the future. The development of Accountable Care Systems was likely to improve care as health and local authority finances were pooled. This, for example, would remove the argument about who was going to treat tobacco dependency. 'What we are going to do is say, what is the highest value intervention for this population that has got this particular need, and then there's a real opportunity we might talk together with secondary care or public health about what should be doing.'

Another example might be - instead of primary care having to fight for extra pulmonary rehabilitation services, commissioners would be talking to hospital doctors about the best way to deliver required outcomes for the population. 'This could be an opportunity for us to communicate better. With larger scale organisations there could be new opportunities for primary care generalists to improve respiratory care for a whole population.'

Noel went on to give a recent example of an uplifting session when in Southwark practice learning time event had changed from a didactic style to one where they started looking at doing things differently.

'*We discussed how we could do a care plan after a patient has had a holistic health assessment and then we brought some actors in. The really wonderful thing for me was to see a fantastic new generation of young GPs, qualified in the last five years, working on being creative.*

'A year ago the room was full of negative comments with people saying we can't do this and we can't do that and over time with the right positive attitude we've ended up retaining amazing people on a journey trying to improve things and enjoying their jobs.

'I can see a way forward where not just GPs but all of us in the community can do some more productive work with our patients,' he said.

Mindfulness: learning to relax

The meeting ended with a session by Sally Whitely, an ex-army nurse and now a personal developmental coach, on recognising and managing stress in the workplace.

She discussed relaxation techniques and mindfulness, which she said involved making people take control of their breathing and think about where they are in the present.

'So many of us never stop but just go from task to task. We need to be more aware of what is going on around us, all the positive things such as a tree, kids laughing – the things that lift you up and make you feel good. Unless you stop, you don't remember things. Take a break and you will be more productive,' she said.

Melissa Canavan described how mindfulness has helped her to tackle her nerves and stress, particularly when she was working in a failing practice.

Carol Stonham said she found practising three minutes of mindfulness first thing in the morning really beneficial. There were a number of apps that people could use to help them learn the technique.

A shared affiliated group project

As a community of PCRS-UK Affiliated Groups it was agreed that there was an appetite for shared project work between the groups.

The initial project will focus on the new PCRS-UK Fit to Care publication which summarises the key knowledge skills and training required by healthcare professionals caring for people with respiratory disease in a primary or community care setting, at three clearly defined levels of practice (standard, advanced and expert).

The publication was discussed during the meeting and its place both in negotiating funding for individuals planning CPD during appraisal, and at a larger scale when commissioning workforce education.

The shared project will involve each affiliated group discussing Fit to Care with their members, helping them to assess their levels of respiratory practice as defined by Fit to Care. Each member will be asked to reflect on and report back to the group how their knowledge and education compare to levels of practice defined by the publication. If there is an educational gap, members will be asked whether there is a plan in place to address this and if they are unable to do so, what barriers are hindering them. This will be captured in a standardised survey.

Once all surveys are returned a collated report will be produced highlighting the level of practice, knowledge and education that members have in local areas and the barriers they face in accessing further training. It will reflect the multidisciplinary nature of the group memberhips.

The Affiliated Group Leads are keen, if this project goes well, to embark on other joint projects.

Selection of Best Practice Abstracts Submitted to the Primary Care Respiratory Conference 2017

Abstract No: BP1.
Title: An audit into the completeness of latent tuberculosis screening in the gastroenterology department, prior to patients starting anti-TNF-α therapy
Author(s): Shuaib Meghji
Institution(s): University of Southampton

Background: Patients with severe Inflammatory Bowel Disease (IBD), are prescribed anti-TNF-α agents, if clinical need necessitates, whose immunosuppressive action can potentially reactivate latent tuberculosis infections (LTBI). Meticulous pre anti-TNF-α LTBI screening and management in accordance with the British Thoracic Society's (BTS) guidelines is imperative for patient safety and public health.
Objective : A retrospective clinical audit was performed to evaluate the performance of University Hospital Southampton's gastroenterology department in screening for LTBI in patients with IBD. The performance of LTBI screening was compared to the BTS standards.
Method: The audit population was obtained using the gastroenterology department's biologics database. Inclusion criteria included patients who started their first anti-TNF-α agent between 01/01/2006 to 04/11/2016. Exclusion criteria included deceased patients and patients screened by alternative departments/trusts. Extent of LTBI screening was assessed using hospital record systems: EDocs, EQuest, ECamis and Spectra PACS. If evidence of screening was not located, then this was considered as a failure to meet standard. Following statistical analysis, comparisons were made with BTS standards.
Results: Of the 471 patients audited, 51.2% were females and 48.8% males. 75.2% CD patients and 24.8% UC patients. 231 patients' (49%) LTBI screening was insufficient. 157 patients (33.3%) lacked an adequate TB history and 94 patients (20%) failed to have a chest radiograph (CXR) within 3 months of therapy commencement. Additionally, 85 patients (18.3%) failed to have an IGRA performed. 15 patients (3.2%) were diagnosed with LTBI, whilst 1 case of TB reactivation, occurred once immunosuppressive therapy had commenced.
Conclusion: The completeness of LTBI screening in the audited group was suboptimal with deficits in TB history performance, CXR, TST and IGRAs. One case of active miliary TB occurred as a result of inadequate screening. In light of this, recommendations to address deficits and ultimately improve screening were proposed.
Conflicts of Interest:- N/A
Funding:- This Audit was completed as a module as part of the Medicine A100 course at the University of Southampton; funding was not required.

Abstract No: BP10.
Title:A Quality Improvement Stratgey to Reduce Admissions and Readmissions for patients with COPD
Author(s): Karen Fern on behalf of the Stockport COPD team
Institution(s):

Background: Admissions to Stockport NHS Foundation Trust related to acute exacerbation of COPD (AECOPD) were rising (SFT data 2000-2014). 30 day readmission rates have also risen both nationally and locally (BTS, 2016)
Objectives: Stockport Respiratory Assessment and Treatment Alliance (STRATA) is a strategy to reduce admissions, and readmissions for COPD. The model allows patients to step up and down support based on changing levels of need.
Project Plan: A business case for 2 WTE COPD Nurses was approved to support delivery of the following;

1. Admission avoidance . Patients at high risk of admission across 10 GP practices were identified and reviewed by the COPD Nurse . Treatment was optimised and self-management education provided . Patients and GP's were given contact details to step up support if they became unwell.
2. Reducing readmissions: A patient tracker was developed to enhance communication between hospital Respiratory Nurses and the Community COPD team. All patients discharged following AECOPD are stepped down to the community team for contact within 72 hours. Recovery is monitored and self-management education provided. Patients are stepped down to GP or remain on the caseload if they have on-going needs. They can be stepped up to chest clinic if required.
3. Frequent admitters: Patients with 3 or more admissions due to COPD in a 6 month period are identified and reviewed in a virtual ward round. Actions are shared with key professionals to promote standardised care.

Outcomes: Admission data so far shows reduced admissions and reduced 30 day (same cause) readmissions for COPD. The number of frequent admitters is also reducing.
Recommendations: STRATA could be expanded to cover other respiratory conditions. Further practices are to be included in the next phase of admission avoidance
References:; Royal College of Physicians, National COPD Audit report (2016)
Conflicts of Interest:- nil
Funding:- nil

Abstract No: BP11.
Title: The basic clinical principles of long term oxygen use by adults in the home – The development of an innovative accredited eLearning package.
Author(s): Jo Hobbs - Service Lead and Clinical Manager
Iris Tamburri - Respiratory Advisor
Amanda Whiffin - Clinical, Sales and Marketing Director
Institution(s): Dolby Vivisol

Introduction and Background: Dolby Vivisol are a large home oxygen supply company with an English base (Gatwick) and a Scottish base (Stirling). We provide a service to the National Health Service in the South East and South Central regions of England and to the whole of

Scotland. Recognising that there is a lack of suitable learning tools for clinicians assessing and reviewing patients for home oxygen therapy we developed an eLearning package, accredited by the University of Brighton, for use by external clinicians and in house Dolby Vivisol staff.
Overall Aim: To educate NHS and internal staff, increase knowledge and standardise practice in the field of home oxygen therapy.
Objectives: To provide an accredited online educational resource for external NHS clinicians new to the role of home oxygen assessment and review and to provide an accredited online educational resource for internal Dolby Vivisol staff.
Methods: An educational programme was written using up to date evidence based guidelines and research. The material was presented as short units and recorded via video and uploaded onto a specifically designed eLearning platform. An assessment was designed for each unit and uploaded onto the system so that participants completing the training could be competency assessed at the end of each unit.
Results: We launched the new eLearning Programme in May2017. Initial feedback, from experts in the field, suggests that it will be a useful resource.
Conclusions: The new eLearning programme provides a useful resource for clinicians new to the field of home oxygen assessment and review and for Internal Dolby Vivisol Staff.
Conflicts of Interest:- Nil
Funding:- Dolby Vivisol and NHS

Abstract No: BP13.
Title: When more is less: Cost savings associated with new inhaler products in a community based respiratory clinic
Author(s): Andrew Hardy, Sarah Cowdell, Trish Griffiths
Institution(s): Locala Community Respiratory Services

Methods: A number of new inhaled therapies have become available for COPD in the last few years. We have audited inhaler usage for COPD in a community based respiratory clinic in April 2013-14, April 2015-2016 and April 2017-May 2017. We base inhaler prescribing on the GOLD guidance. Costs have been calculated based on pricing in the British National Formulary in June 2016.
Results : GOLD staging in 2015-16 was as follows: GOLD A 3%, GOLD B 13%, GOLD C 7%, GOLD D 77%. Mean patient age was 69 years, mean FEV1 44%, mean CAT score 22, mean self-reported exacerbation rate 2.68 per annum. In each audit period approximately 60% of patients had a change in medication following clinic review.
The overall cost of inhaled medications following clinic review was £775.73 in 2013-14, £603.38 in 2015-16 and £583.53 in 2017. This represents a cost saving of £192.20 (25%) per patient per year. The biggest cost saving was in the reduction of use of LABA-ICS combination inhalers. The use of LABA-ICS decreased from 76% in 2013-14 to 61% in 2015-16, and is 63% in April-May 2017 suggested a sustained change in practice. The proportion of patients on seretide fell from 66% to 15% to 6%. The use of dual-bronchodilator therapy, either as single agents or in a combination inhaler, increased from 16% to 30% to 34%.
Summary: The availability of novel, cheaper inhaled therapies for COPD and pro-active medicines management has resulted in significant cost savings in this patient group.
Conflicts of Interest:- None declared
Funding:- None

Abstract No: BP14.
Title: "Real World" use of azithromycin for managing COPD exacerbations in a community based respiratory service
Author(s): Andrew Hardy, Sarah Cowdell, Trish Griffiths
Institution(s): Locala Community Respiratory Services

Background: Previous studies in COPD have shown that long term azithromycin can reduce exacerbation severity and frequency. We audited our own experience of using azithromycin and compared to published outcome data.
Methods: Patients attending clinic between April 2014 and 2016 who were using long term azithromycin were included in the audit. We compared demographic information and outcome data in this patient group to published outcome data for a period of 1 year after commencing azithromycin. The local protocol uses 250mg azithromycin three times per week. Monitoring of bloods, ECG and counselling regarding potential side effects is carried out according to a locally agreed protocol.
Results: Of 180 individual patients with COPD, 21 received azithromycin (12%). Mean patient age 71 years, mean FEV1 47%, mean CAT 21. 1 patient (5%) was a current smoker. Mean self reported exacerbation frequency was 7.0 exacerbations per year, and 86% had >3 exacerbations per year. 29% had QTc >450ms at baseline. 95% were on LABA/ICS + LAMA triple therapy, 86% on carbocisteine, 48% on theophyllines.
At 1 year self reported exacerbation frequency fell to 2.8 per year, with 22% having >3 exacerbations. There was no change in hospital admissions or CAT scores. 4 patients (20%) stopped treatment within 12 months- 2 because of no clinical benefit and 2 due to GI side effects. 2 patients (10%) died during the study period- 1 due to a COPD exacerbation and 1 due to an unrelated surgical problem.
Summary: The patient group and outcomes were similar to published trials. There was a reduction in exacerbation frequency but no change in hospitalisations or quality of life scores. The data suggested azithromycin is used late in the treatment pathway as most patients were already on triple inhaled therapy plus carbocysteine and theophyllines prior to starting long term antibiotics.
Conflicts of Interest:- None
Funding:- None

Abstract No: BP15.
Title: Asthma Matters; The introduction of Exhaled Nitrous Oxide (FeNO) to maximise asthma management in primary care
Author(s): Pamela Astley
Institution(s):

Background: The impact of asthma can have significant consequences for the National Health Service, society and more significantly, those with an asthma diagnosis, in terms of cost, missed days at work and quality of life (BTS/SIGN, 2013). In order to reduce the impact of asthma, healthcare staff are required to ensure care is effective and innovative (NHS Improvements, 2016). To meet with the asthma agenda, set by the NICE, (2014) this project looks at the impact of introducing Fractional Exhaled Nitrous Oxide monitoring (FeNO) into routine asthma reviews.
Aim: The Aim is to improve the management of patients with asthma, who have a significant FeNO reading through the introduction exhaled nitrous oxide monitoring.
Method: With Key stakeholder support, were informed of the study

and the potential benefits of introducing FeNO monitoring. Staff were trained in the use of the machine and the interpretation of the results. Documentation was developed to support the integration of the activity.
Evaluation: Ongoing support and review was integral to the project's success and is noted by NHS Improvement (2016) to be important in sustaining change. Evaluation involved analysing patient's initial FeNO levels against a further reading to identify any changes in FeNO levels alongside, if the patient's asthma symptoms have altered.
Conclusion: It is anticipated that the introduction of the FeNO monitoring in routine asthma reviews will have a positive impact on asthma management and the burden of asthma on the health service.
References: National Institute of Clinical Excellence, (2014). Measuring fractional exhaled nitric oxide concentration in asthma: NIOX MINO, NIOX VERO and NO breath. Retrieved from : https://www.nice.org.uk/Guidance/DG12
NHS Improvement, (2016). Implementing the Forward View. Retrieved from: https://www.gov.uk/government/publications/implementing-the-forward-view-supporting-providers-to-deliver
British Thoracic Society & Scottish Intercollegiate Guidelines Network, (2013). British guideline on the management of asthma – Asthma priorities: influencing the Agenda. Retrieved from: https://www.asthma.org.uk/globalassets/campaigns/healthcare-improvement-scotland_asthma-priorities.pdf
Conflicts of Interest:- none
Funding:- Dr Wilkinson & Partners, Manor House Surgery, Glossop Derbyshire

Abstract No: BP16.
Title: Made you look: using graphics for Quality Improvement in the COPD primary care audit
Author(s): Holzhauer-Barrie J, McMillan V, Baxter N, Saleem Khan M
Institution(s): Royal College of Physicians, London

Aims and context: The National COPD Audit Programme conducted a primary care audit in Wales, involving extraction of Read-coded data from GP systems. The audit covered January 2014-March 2015, and captured over 48,000 records from 280 practices. Audit data were used to recreate the COPD value pyramid to understand the extent to which the cohort received value-based care.
Methods: The COPD value pyramid provides estimates of cost per quality adjusted life year (QALY) gained for evidence-based COPD interventions. The highest value intervention (flu vaccination at £1000/QALY) is depicted at the pyramid's base, whilst the lowest value (telehealth at £92000/QALY) is at its apex. Other interventions are also included (from highest to lowest value): quit smoking therapy (QST), pulmonary rehabilitation, LAMA, LABA and triple therapy. The pyramid aims to provide a guide for how value for patients and the healthcare system can be optimised.
A bespoke Welsh version of the pyramid was created using audit data. This involved calculating the number of people, out of the relevant denominator (i.e. the audited population, or subset thereof) who received each intervention. Time periods presented varied according to indicator; for example, to capture the relapsing nature of tobacco addiction, QST prescriptions in the last year were used.
Results: The system providing value-based COPD healthcare will have a graphic output resembling the COPD value pyramid. The output for Wales, however, did not configure a pyramid: for example, 37.5% of people were prescribed expensive, low-value triple therapy, and only 10.8% were prescribed QST.
Presenting the data in this way has made the audit findings more digestible and impactful than a simple table of numbers.
Conclusion: The results suggest an overuse of costly and potentially unnecessary interventions, coupled with underutilisation of high-value interventions. This represents considerable expense to the NHS, and may also indicate inappropriate, or unsafe, patient care. The pyramid also demonstrates the value and power of innovative data display methods.
Conflicts of Interest:- None.
Funding:-

Abstract No: BP17.
Title: DART Respiratory Disease Programme for Darlington 'A catalyst for change'
Author(s): Adams CM, Penney B
Institution(s):

We embarked on a two-year project in collaboration with the Academic Health Science Network North East in 2015. The landscape of health care is changing rapidly in a climate where the burden of chronic disease and the pursuit of value in healthcare provision challenges all involved in healthcare to explore new ways of working. For a long time practices have been working in silos on disease specific targets generated by QOF. In Darlington Respiratory Team (DART) we have been able to come together to develop pathways of care and through specific objectives, have been able to improve outcomes.
Evidence - Spirometry audit demonstrated only 38% accuracy/quality. Significant variation in in management of patients presenting with breathlessness symptoms to GP or Nurse.
Setting – 11 GP Practices. Total population of patients approx. 120,000
Issues prior
Variation in confidence/competence of Nurses in Respiratory management; Poor referral rates for Pulmonary rehabilitation; Lack of smoking cessation service access; Variation in management of COPD exacerbations/rescue pack; Variation in respiratory prescribing habits
Methodology: Respiratory Nurse support for each Practice – 3 visits per practice per year. Development of a competency framework to assess all Practice Nurses/HCAs in Spirometry including quality assurance processes; Development of inhaler competency framework and assessment of all Practice Nurse leads, who then adopt a 'Champion role' within their practice and share best practice with colleagues in context of local guidelines for inhaler prescribing; Development of standardised Asthma and COPD templates for all practices to use; Development of Breathlessness pathway; Re-instate use of 'COPD exacerbation' template/pathway; Design and implementation of audits for practices using 'Pointsplus' software tool.
Findings: Improvement in quality of Spirometry; Improved referral rates into Pulmonary rehabilitation; Improved provision of 'Self management' for patients; Pathways for exacerbating patients improved.
Conclusion: Several positive outcomes achieved, more work is needed to ensure continued engagement.
Conflicts of Interest:- GSK (Pointsplus software provision)
Funding:- Academic Health Science Network (North East)
Darlington CCG

Abstract No: BP18.
Title:Prudent Respiratory Prescribing – A Collaborative Strategy for Change
Author(s): Dr Sally Lewis
Institution(s): Medicines Management Pharmacist Aneurin Bevan University Health Board / Practice Pharmacist Oakfield St Surgery Ystrad Mynach

Across Wales and within Aneurin Bevan University Health Board (ABUHB) there is variation in respiratory prescribing that cannot be fully explained by prevalence, deprivation and smoking rates. Also, high spend and greater use of high dose inhaled corticosteroids (ICS) does not equate to better patient outcomes (1). Access to Pulmonary Rehabilitation which is well evidenced to improve quality of life and reduce hospital admissions is also not equitable for all.
In 14/15 ABUHB spent £17.2 million on respiratory prescriptions and had the highest prescribing rate of high dose ICS in Wales. Previous primary care audits had identified prescribing was not always in line with recommendations i.e. high doses not stepped down in asthma, lack of prescriber awareness of ICS potency and COPD patients with milder disease prescribed triple therapy with high dose ICS.
A collaborative of primary and secondary care doctors, nurses and pharmacists worked together to devise a strategy to encourage good practice in respiratory disease management with a view to rebalancing investment of resources to improve patient outcomes. The strategy has 3 main themes: Medicines optimisation to generate cost savings for reinvestment; Local treatment pathways for COPD and Asthma (including ICS dose comparison charts); Education for healthcare professionals. In addition, a respiratory nurse specialist was employed to work in primary care and advanced inhaler technique training was funded for trainers in each locality cluster to deliver a sustained training programme for other healthcare professionals.
In the last two years, we have reduced respiratory prescribing spend by £1.4 million (8%), high dose ICS prescribing has reduced from 40% to 23% of all ICS and there has been a successful business case to reinvest some of the savings in expanding the pulmonary rehabilitation service. The key to our success has been multidisciplinary working.
1. All Wales Medicines Strategy Group. Respiratory Prescribing Analysis with Cluster Level Comparators. February 2015.
Conflicts of Interest:- None
Funding:- None

Abstract No: BP19.
Title: Field Walking Tests in Pulmonary Rehabilitation: A retrospective review to compare VO2 peak improvements between the 6 minute walking test and incremental shuttle walk test to determine the most relevant field walking test for community pulmonary rehabil
Author(s): Kevin Greaves
Institution(s):

Design: Retrospective analysis of data and research
Objective: To evaluate and compare improvements in VO2 peak obtained from both 6-minute walking test (6MWT) and incremental shuttle walking tests (ISWT) to assess the level at which VO2 peak improvement correlates to minimal clinically important difference (MCID). From the data and research available, a recommendation will be made as to which is the most appropriate field exercise test for a pulmonary rehabilitation (PR) programme in a community setting.
Methodology: The results of 148 COPD patients collected over a 4 month period were reviewed following their pulmonary rehabilitation programme (PR). 56 patients (29 males / 27 females) with a mean (± SD) age of 73 ± 8.5 years completed the 6MWT and 92 patients (59 males, 33 females) with a mean (± SD) age of 70 ± 8.1 completed the ISWT. Mean VO2 peak was calculated for each and the average improvements recorded. Literature was reviewed to determine factors that affect the outcomes from each field walking test.
Results: Data obtained has shown that minimal important difference (MID) in walking distance for both tests, occurs when an improvement in peak VO2 >1.2 (ml/min/kg) is achieved. Furthermore, achieving a peak VO2 >2.1 (ml/min/kg) yields highly significant improvement in distance walked for both field walking tests.
Conclusion: This study has clearly identified 6 factors that influence field walking tests and has concluded that the six-minute walk test is the most appropriate field walking test for use in a community setting. The lack of significant research on the modified 6MWT adopted locally requires further study in order to establish the validity and reliability of a shorter track length.
Conflicts of Interest:- None
Funding:- None

Abstract No: BP2.
Title: Does applying, PDSA cycles improve reported patients' outcomes in a federated model of primary care for COPD patients?
Author(s): Louise Lomas
Institution(s): PCRS

Objective: Could we improve reported COPD patient care outcomes using PDSA (Plan, Do, Study, Act) cycles with a federated group of GP (general practice) surgeries.
Design: A 2-year longitudinal study using 4 PDSA cycles, data collection every 6 month.
Setting: A semi-rural area of Northumberland, utilizing a federated group of 13 GP practices. The COPD patient population was 1,263 giving a local prevalence of 1.7% compared to national prevalence of 1.9%
Participants: All COPD patients included in the study, no gender differentiation, age limit or exclusion based on palliative care or exception from QOF (quality outcome framework) indicators.
Intervention: A targeted approach to patient management in line with NICE (National Institute of Clinical Excellence) guidelines for COPD, providing management above QOF. The targets were: -

- Data collection - to establish correct coding of indicators for prescribing and diagnosis.
- Treatment to NICE guidelines.
- Use of COPD Assessment Test (CAT).
- Use of MRC dyspnea scale.
- Monitoring of Unscheduled hospital admissions (secondary outcome)

Results: A 15% improvement in COPD patient care to NICE guidance. A 51% improvement in coded exacerbation rates, 56% improvement in use of CAT scores, 13% improvement in MRC scores recorded and a 4% improvement in diagnosis. Unscheduled admission data indicated a reduced admission rate but not statistically significant.
Conclusion: A federated model of primary care can deliver quality improvement on a population basis. The improvement in CAT score recording and exacerbation rates enabled a targeted approach to those patients most at risk of frequent exacerbation and hospital admissions.
Conflicts of Interest:- None
Funding:- None - completed as part of a MSc

Abstract No: BP20.
Title: Sharing evidence of how Community Pharmacist interventions can improve COPD management
Author(s): Attar-Zadeh D, Guirguis A, Heading C, Shah S, Shah U, Bancroft S
Institution(s): LNWLPF of the Royal Pharmaceutical Society, Pinner, UK.

Context: High value interventions can be provided by community pharmacists to potentially improve outcomes for patients with COPD. The more people who appreciate this, the wider such improvements can be achieved.
Problem: Some patients have a poor understanding of their condition and may not be managing in the best possible way.
Methodology: In February and March 2015, clinical and demographic data were collected from consenting patients receiving medicines prescribed for COPD, by community pharmacists in NW London. Interventions were made where appropriate.
Strategy: The collected data would allow appropriate interventions in the pharmacy and provide an overview of care patterns followed by these patients. This information could be shared to further improve outcomes on a larger scale.
Measurements: Patients were asked questions from a semi-structured questionnaire. Information was collected and action taken to provide inhaler training, guidance and referral, where appropriate.
Changes: Of 135 patients, 56% received inhaler training, 65% were offered Medicines Use Reviews, 17% patients received guidance regarding rescue packs, 28% patients were referred to GPs and 82% smokers were referred to stop smoking services. Areas of clinical concern identified included poor inhaler technique, poor familiarity with pulmonary rehabilitation services, higher than expected ICS use and medication or other issues requiring referral to GPs.
Key findings have been used to prepare a printable infographic for sharing with health professionals at professional meetings and exhibitions.
Lessons: The study identified a gap in education and treatment of COPD across NW London and the potential for pharmacists to improve outcomes for respiratory patients. Preparation of the infographic will allow wide dissemination of this key message.
Messages: The ability of Community Pharmacists to improve care of COPD patients and potentially reduce hospital admissions, should be widely appreciated.
Conflicts of Interest:- The infographic was developed and produced by Johnson & Johnson Limited.
Funding:- None

Abstract No: BP21.
Title: Audit on the prescribing of inhaled short-acting beta2 agonists in the treatment of asthma: many patients overuse this medication
Author(s): Kotecha A
Institution(s):

Background: An inhaled short-acting beta2 agonist (SABA) should be prescribed as a short term reliever therapy for patients with symptomatic asthma. Mortality can occur in mild asthma when SABA are used excessively without inhaled corticosteroids.
Aims: This audit aims to assess whether the current BTS / SIGN British guideline on using inhaled SABA in asthma treatment is being followed at Northway Medical Practice. This states that good control of asthma is correlated to patients requiring little or no usage of SABA.
Methods: The practice's electronic patient record was searched for patients who were prescribed more than seven SABA inhalers in the past year, to generate a sample of the highest risk patients. Information collected for each patient included their age, sex, the number of SABA inhalers prescribed to them in the last 12 months, and the phase of asthma management they are on.
Results: 35 patients met the audit inclusion criteria. As the number of SABA inhalers prescribed to a patient in the last 12 months increased, the number of patients generally decreased. Apart from one anomalous result, no patients were on the first phase of asthma management. All patients who were prescribed 13 or more SABA inhalers in the last 12 months were on phase 4 of asthma management. None of the patients who were prescribed 8, 9, 10 or 12 SABA inhalers in the last 12 months were placed on phase 4 of the asthma management plan.
Conclusion: Possible reasons for the findings include patient non-adherence to treatment regimens resulting in increased reliance on reliever inhalers, and patients requesting numerous SABA inhalers so that they can have multiple stores of this medication to keep in different locations. The healthcare team should be encouraged to ensure patients have correct knowledge of what good asthma control and inhaler technique entails.
Conflicts of Interest:- None
Funding:- Not applicable

Abstract No: BP22.
Title: Post-exacerbation pulmonary rehab; the challenges of putting guidelines into practice
Author(s): Moth, L., Hogg, L., & Osman, L.
Institution(s): Guys and St. Thomas' NHS Foundation Trust

Outline of Context: Post-exacerbation pulmonary rehabilitation (PEPR) delivered within four-weeks of hospital discharge following an acute exacerbation of chronic obstructive pulmonary disease (AECOPD) is recommended (Bolton et al 2013). PEPR reduces hospital admissions and improves mortality and health related quality of life (Puhan et al 2011), low-uptake and high rates of ineligibility are reported, though reasons for this are poorly understood (Jones et al 2014). An audit was undertaken to inform local quality improvement.
Method: A three-week, prospective audit for patients admitted to St. Thomas' Hospital with an AECOPD was conducted in March 2017. Data included numbers of referrals to PEPR, uptake, and reasons for ineligibility.
Results: Fifty-two patients (mean age 70, FEV1 percent predicted 46%, 58% male) were hospitalised with AECOPD. Twenty-one (40%) were suitable for referral to PEPR, 15 (71%) declined. Twenty-eight patients were ineligible for PEPR and PEPR was not discussed with three patients.
Reasons for ineligibility for PEPR included; poor mobility (n=15(54%)), already enrolled/recently completed (n=5(18%)), psychosocial (n=3(11%)), cardiac instability (n=1(4%)), awaiting investigations (n=2(7%)), palliative (n=2(7%)).
Six (29%) patients were referred for PEPR, three declined, but accepted referral via non-fast track (FT) PR; three were assessed via FT for PEPR. Of the latter, two attended a PR-program; one was inappropriate due to cardiac instability. Of the three patients referred via non-FT, one died, one was ineligible due to cardiac instability and one did not attend assessment.
Conclusions/Analysis of Cause:Despite evidence for PEPR effective-

ness, clinical application is challenging. Similar to other reports, <30% of those eligible for PEPR were assessed (Jones et al 2014). This was due to patients declining PEPR, and a high rate of ineligibility (60%). The most frequent cause of ineligibility was poor mobility. Understanding why patients decline PEPR and addressing the inequity of access to those with poor mobility should be prioritised.
Conflicts of Interest:- None
Funding:- No specific funding. Service evaluation.

Abstract No: BP23.
Title: Is integrated pulmonary and heart failure rehabilitation effective and safe in primary care?
Author(s): Woodward A, Doe G, Clarke D, Ghosh S
Institution(s): Leicestershire Partnership NHS Trust

Background: Integrated pulmonary rehabilitation (PR) and heart failure rehabilitation (HFR) programs have been shown to be effective in a research and hospital setting (Evans, 2010) but little is known whether combining the two diseases into one rehabilitation program is safe and effective in primary care.
Method: A 12-month pilot of community based integrated PR and HFR programmes was established in Leicestershire for patients with either a confirmed diagnosis of COPD and a MRC score of ≥3 or a confirmed diagnosis of heart failure and a NYHA of ≥2.
79 patients (50 male, mean age 71, age range 51-87) were recruited. The integrated rehabilitation programme was set up in accordance current national guidance with twice weekly exercise and education sessions for 6-weeks. Patients were assessed at baseline and completion of the programme using the incremental shuttle walk test, endurance shuttle walk test, the Chronic Respiratory Questionnaire or Chronic Heart Questionnaire, GAD7 questionnaire and PHQ9 questionnaire.
Results: 63 patients completed the integrated programs with outcomes as below.

	Mean – Pre (SD)	Mean – Post (SD)	Mean Diff	p value
ISWT (m)	245 (145)	301 (147)	56	p < 0.001
ESWT (s)	221 (141)	597 (390)	376	p < 0.001
Dyspnoea	2.9 (1.2)	3.7 (1.4)	0.8	p < 0.001
Fatigue	3.8 (1.3)	4.4 (1.4)	0.6	p < 0.001
Emotion	4.9 (1.3)	5.4 (1.3)	0.5	p < 0.01
Mastery	4.7 (1.5)	5.5 (1.3)	0.8	p < 0.001
GAD7	4.2 (4.6)	3.4 (4.3)	- 0.8	p < 0.05
PHQ9	5.5 (4.8)	4.2 (4.7)	- 1.3	p < 0.05

There were no adverse events reported during any of the programs.
Conclusion: This pilot programme has demonstrated that the delivery of integrated PR and HFR within a community setting is safe and effective and delivers comparable outcomes to previously reported disease specific programmes.
Conflicts of Interest:- None
Funding:- None

Abstract No: BP24.
Title: Good practices investigating bronchial asthma as psychosomatic disease
Author(s): Stamatopoulou E1, Stamatopoulou A, Christodouli Brinia A., Tsiliaç D., Giannakopoulos D., Kontodimopoulos N.
Institution(s): M.Sc. National School of Public Health, General Hospital KAT, M.Sc. Piraeus University of Applied Sciences, Athens, Greece.

Aim: The highlighting good practices for investigating bronchial asthma as psychosomatic disease.
Methods: Investigation method is secondary as it draws data from, relevant to the theme, world literature. The reasoning process followed by the development of the matter is the productive process which governs the assessment of asthma symptoms and psychosomatic diseases.
Results: The Global Initiative for Asthma (GINA) shows that the psychosocial problems are the causing factors of asthma control failure. Around 250,000 people lose their lives every year. It is a chronic inflammation of the respiratory airways causing bronchial constriction transient caused dyspnea. The incidence of psychiatric diseases in patients with asthma are not fully researched. To date little information is available about the extent of the problem and the factors associated with psychogenic asthma. Psychosomatic problems are risky factors for the worsening of asthma, even though the symptoms of asthma is well controlled. The psychological stress affects the appearance of bronchial asthma. Cases (50%) of patients with asthma has been diagnosed in one of the following diseases: irritable bowel syndrome, dermatitis, depression, end panic disorder. The intense stress and emotions identified as factors cause asthma exacerbations in 33 cases. Psychosocial factors are interrelated among: (a) Stress and asthma, (b) Emotion and asthma symptoms, (c) Problems related to the character and the patient's behavior, (d) problems of daily living and quality of life, and (e) problems related to family relations and the history of life.
Conclusions: The common symptoms of asthma and the above mentioned psychosomatic diseases combined with the separate effect of stress, which caused by strong feelings, can cause exacerbations. The above confirms that asthma may be considered as psychosomatic disease. Early detection of symptoms and appropriate psychotherapeutic intervention can improve the symptoms of asthma with a positive effect on the course of the disease.
Conflicts of Interest:- NO
Funding:- Nothing

Abstract No: BP25.
Title: Enhancing understanding of asthma in children and young people through online learning
Author(s): Marsh V, Brown J, Neal J, Koistinen-Harris J, Douglas K
Institution(s): Education for Health

Background: Asthma is the most common medical condition and frequent cause of morbidity in children and young people (C&YP). School absence, activity avoidance and feeling different are issues repeatedly highlighted by C&YP with asthma . Asthma deaths in the UK are amongst the highest in Western Europe and often occur outside of hospital . C&YP spend much of their time away from their parents/carers, with adults who may be lay people with little understanding of asthma[4].
Strategy for change: To help people who work with C&YP to improve their knowledge and understanding of asthma, we developed a free online educational resource – 'Supporting Children's Health (SCH)'. This charitable initiative, by Education for Health in partnership with the George Coller Memorial Fund, involved a stakeholder group including C&YP, parents, teachers and school nurses. The online resource helps users to:

- Understand how asthma affects a child's quality of life
- Recognise the triggers that may affect a child's asthma
- Understand how medicines work and how different inhalers are used
- Recognise signs that a child may be developing an asthma attack
- Know how to help a child who is having an asthma attack

Evaluation: Since its launch in 2015, 8500 users from a variety of backgrounds have registered with the site. User feedback to date is overwhelmingly positive, with 100% regarding the site as easy to use and 95% reporting increased confidence in supporting C&YP with asthma. "Thank you so much, the module is brilliant. I thought I was clued up, as I have a husband and 2 children with asthma, but honestly I learnt a lot."
Aspiration: With growth continuing at >50 new users per day and an update planned, SCH aspires to be nationally recognised as the 'go-to' educational resource for the basics of asthma in C&YP.
Conflicts of Interest:- None
Funding:- Online resource funded jointly by Education for Health and the George Coller Memorial Fund

Abstract No: BP27.
Title: Using eLearning to promote correct inhaler use by respiratory patients: the UKIG Inhaler Standards website
Author(s): Fletcher M, Marsh V, Brown J, Smith J, Koistinen-Harris J, Neal J, Scullion J
Institution(s): Education for Health, UK Inhaler Group

Background: The correct use of inhaler devices is crucial in the management of good basic care [1]. Many patients are unable to use their inhalers correctly [2] leading to sub-optimal use and effect. Many HCPs also lack the necessary knowledge and skills to support patients [3]. As a result, in January 2017 UKIG launched a set of standards and competencies for healthcare practitioners [4] to enable them to work with patients to optimise technique and maximise the benefit of the medication.
What is the problem? To enable change these standards need to be implemented across the NHS, but there are many reasons, including lack of awareness, why HCPs do not always follow guidelines [5]. Education has a key role to play in facilitating the application of an agreed set of principles into clinical practice, but time constraints can hinder this approach.
Strategy for change: In order to raise awareness of the importance of accurate inhaler technique amongst HCPs and promote the use of the UKIG standards nationally, Education for Health in collaboration with UKIG launched a free-to-access interactive educational website on World Asthma Day 2017 (https://ukiginhalerstandards.educationforhealth.org). The twelve standards were presented as individual, interactive micro-learning activities with a responsive design to facilitate access from mobile devices.
Google analytics showed that in the first 6 weeks, 1,601 users engaged in 2,317 sessions with a total of 13825 page views. Analysis of the network origin of the sessions demonstrated a good engagement of healthcare staff at work. Almost a third of site accesses came from mobile devices.
Conclusion: Early data indicate a strong interest in the interactive version of the UKIG standards for inhaler technique. The responsive website design and use of micro-learning promote easier engagement with the UKIG standards for busy HCPs.
Conflicts of Interest:- None
Funding:- Website development funded by UK Inhaler Group

Abstract No: BP28.
Title: Referral to a Community based Asthma Liaison Nurse
Author(s): Miles G, Price K, Ward T
Institution(s): BreathingSpace, Rotherham NHS Foundation Trust, Rotherham, South Yorkshire,

An Asthma Liaison Nurse (ALN) post was introduced in March 2015 in response to the National Review of Asthma Deaths (NRAD 2014), to follow up patients admitted to hospital and review difficult asthmatics in primary care. The postholder is located in BreathingSpace (nurse led community facility).
Issues: The NRAD report recommends patients admitted to hospital be reviewed in primary care within 48hours of discharge and by a specialist within 1 month.
Objective: Are the correct patients are being referred to the ALN, and the NRAD guidance achieved?
Method: Audit of Asthma admissions to RDGH June 2015- May 2016 and June 2016 – May 2017, referral rates and time to being seen by ALN.
Results

Date:	June 2015-May 2016	June 2016 – May 2017
Admissions (No.)	205 (180 patients)	183 (167 patients)
Age	Av. 46yrs (18-95)	Av. 45yrs (18-89)
Not Asthma Diagnosis	14	5
Known to ALN	Y 29 (15%)	Y 37 (21%)
	N 162 (85%)	N 141 (79%)
Referred to ALN	Y 66 (35%)	Y 58 (33%)
	N 125 (65%)	N 120 (67%)
Time to being seen	n= 66	n= 58
	<2days: 11 (19%)	<2 days 19 (29%)
	3-7days: 19 (33%)	3-7 days 21 (32%)
	<1 month: 24 (41%)	<1month 22 (33%)
	>1 month: 4 (7%)	> 1 month 4 (6%)
Deaths	5 (77-86yrs)	3 (81-85yrs)

Discussion: Only a small proportion of admitted patients are referred to the ALN. This has not changed over 2 years despite efforts to simplify the referral process. When patients ARE referred, most are see within a month. The 8 Asthma deaths were in patients over the age of 70, none had seen the ALN.
We need to examine clinical outcomes of patients seen and consider our referral process and engagement with clinical staff at the hospital and in General Practice to ensure we are reaching this vulnerable group.
Conflicts of Interest:- None
Funding:- None

Abstract No: BP29.
Title: Using a virtual ward MDT as a platform to discuss COPD patients who have been identified as having frequent admissions to hospital promotes a collaborative and coordinated approach between the COPD Specialist Nurse based in the community and the hospital
Author(s): Kathryn Williams, COPD Specialist Nurse, Stockport, UK
Institution(s): Stockport NHS Foundation Trust

Outline: The number of admissions to Stockport NHS FT related to acute exacerbations of COPD has continued to rise (SFT data 2000-2014). The 30 day readmission rates for the same cause have also continued to rise both nationally and locally (Royal College of Physicians 2017). Since COPD is predicted to become the third leading cause of death worldwide by 2020 (GOLD 2017), a strategy for admission profiling was commenced in order to identify these patients.
Analysis and strategy for change: Patients with three or more admissions due to COPDin a 6 month period were identified and reported via the patient tracker. This is assessed monthly by the COPD Specialist Nurse based in the community and used to provide an holistic patient

assessment about these specific patients with complex needs and collate appropriate information ready for the monthly virtual MDT. This information would be shared in chest clinic with the Respiratory Consultant and Respiratory Specialist Nurse. This allows for more joined up care bringing the community and hospital together to provide a collaborative approach in addressing causes and produce an individual optimised management plan for action.

Measurement of Improvement: The admission data so far has shown a reduction in admissions and readmissions for COPD since this strategy was implemented during 2015. This is collated quarterly for statistics, however, the evidence is visible each month, since there are no further admission dates for most of these identified patients and less newly identified patients being highlighted.

Effectiveness and lessons learned: Complex patient information sharing is more coordinated, efficient and produces optimal and effective management plans. However, this depth of holistic assessment requires more time and a level of experience necessary to provide relevant and appropriate information to be used during the Virtual ward MDT.

A pathway was also commenced to communicate the initial process with the Gp's, as well as any ongoing information from the virtual ward MDT.

Conflicts of Interest:- None

Funding:-

Abstract No: BP31.

Title: Dance Easy – potential for dance to improve wellbeing of people who are breathless

Author(s): Siân Williams, Holly Townes

Institution(s):

Context: Access to physical interventions to reduce breathlessness is limited. Dance has positive outcomes for people with dementia and Parkinson's disease. Its feasibility and impact for breathless people is unknown. This proof of concept study aimed to deliver and evaluate a dance intervention.

Strategy: Three phase intervention delivered by a trained dance teacher working with a respiratory physiotherapist:

1. Anecdote circles 3 about 'going dancing' at two Breathe Easy (BE) meetings generated stories about joy in dance: learning, dressing up, socialising and the dance.
2. BE members invited to, and participated in, five rehearsals for a group dance performance
3. Group dance performance (video) by BE members following 'open' warm up at BE meeting.

Results: 10 people with breathlessness safely participated in 5 weeks of rehearsals and performed a group dance at a BE meeting. For 8/10 (80%) this experience met or exceeded their hopes and expectations and 8/10 (80%) said they would like to continue to participate in dance sessions. All (100%) of those attending the BE performance meeting participated in the warm up.

As a result of this feedback dance classes now run weekly for this BE group.

Learning and messages:

1. Dance for people who are breathless is feasible, fun, sociable and safe when delivered by a trained teacher working with a physiotherapist
2. Dance exists in all cultures so can be adapted to context: music, dance steps and stories
3. Dance can incorporate aerobic and resistance training, as well as activity to improve balance and gait.
4. Anecdote circles are an effective way to build engagement
5. Further studies are needed to evaluate the potential of dance to impact on breathlessness.

Jones AW, Taylor A, et al doi: 10.1183/23120541.00147-2016

Connolly MK et al. Dancing towards well-being in the Third Age. Literature Review Trinity Laban 2010 http://cognitive-edge.com/resources/basic-methods/

Conflicts of Interest:- None

Funding:- Self-funded, part of an accredited Level 3 Open College Network (OCN) course Leading Dance for Older People in conjunction with Green Candle Dance Company

Abstract No: BP32.

Title: Patient utilisation of an acute COPD exacerbation hotline prior to admission

Author(s): Mak VHF, Batham O, MacPhee C.

Institution(s):

Hammersmith and Fulham Community Respiratory Integrated Care Service includes an acute exacerbation hotline for advice to support self-management, and enable triage for urgent home visits or admission. All diagnosed COPD patients known to the service are given the number and reminded to call in event of problems. The hotline is manned by an experienced respiratory practitioner from 9am-5pm, Mon-Frid.

Rationale: To examine how well the hotline is used by patients in crisis. An audit of all discharges from local acute Trust sites with a primary diagnosis of COPD in a 3 month period (Jan-Mar) over 4 years undertaken. The records of patients were examined to determine if:

1. Known to the service prior to the date of admission
2. If known, whether they contacted the hotline during the week before admission
3. If contacted, what the outcome was.

Results

	Total COPD discharges	Known to service (%)	Called service (%)	Admitted as result (%)
Jan-Mar 2014	125	94 (75)	27 (29)	8 (30)
Jan-Mar 2015	77	69 (89)	22 (32)	5 (23)
Jan-Mar 2016	120	89 (74)	16 (18)	2 (13)
Jan-Mar 2017	83	61 (73)	11 (18)	5 (45)

- Approximately a quarter of patients discharged with a primary diagnosis of COPD were not known to the service.
- In the last 2 years, fewer than 1 in 5 contacted the hotline prior to admission.
- Of those that did make contact, many were so ill, they required emergency admission.

Future actions: The utilisation of the acute exacerbation hotline was disappointingly low in admitted patients. We are undertaking a further audit to examine reasons why patients did not call before admission (e.g limited hours, rapid decline in condition, perceived lack of benefit). This will determine how we can modify the service to best support patients at times of crisis.

Conflicts of Interest:- None

Funding:- None

Abstract No: BP34.
Title: Keep Active Keep Well; behaviour change exercise programme
Author(s): Jones R, British Lung Foundation
Frith G, Sheffield Hallam University
Green A, British Lung Foundation

Introduction: The BLF recognises the challenges people with lung conditions have in initiating and maintaining exercise. Pulmonary rehabilitation (PR) sits as the corner stone of support for patients. Despite this the COPD audit identifies that a minority have access and only 40% complete PR.
Keep Active, Keep Well (KAKW) adopts a patient centred approach to address this by delivering a behaviour change intervention to support more patients to become active.
Approach: A three year pilot programme delivered at four sites in England in partnership with local CCGs, Public Health teams, GP practices, PR services' and the leisure/ sports sector.
KAKW compliments the local respiratory pathway delivering a behaviour change intervention as an alternative option to PR for patients who are MRC 1-2 or as an exit route from PR.
KAKW was developed using COM-B (Michie, Abraham & West, 2014) and uses behaviour change taxonomy in design. Motivational Interviewing was also embedded within the programme.
Evaluation: Conducted by Sheffield Hallam University (SHU) a process and outcome evaluation addresses:

- To what extent the programme is effective in supporting and sustaining individuals with COPD into physical activity opportunities (IPAQ)
- The impact on daily life and physical function (CAT), Quality of Life (EQ5D), Patient Activation (PAM) and 6 minute walk test (6MWT).
- Investigate treatment fidelity in the design, training and delivery of the KAKW programme.
- Capture experience of the patients and practitioners through qualitative interviews and case studies.

Key findings to date

1. Significantly meaningful improvements in patient 6MWT, CAT post course attendance
2. Self-reported patient improvements in activity levels post course
3. Behaviour change is a key tool to enabling long term maintenance. Patient adherence to the course is currently 75%, exercise maintenance observed at 6 months post start is 65%
4. KAKW has an expert driven, robust and theoretically underpinned treatment design resulting in high treatment fidelity at both prototype sites.

Conflicts of Interest:- None
Funding:- Sport England

Abstract No: BP4.
Title: Getting a GRIP on Respiratory care- a multi-disciplinary approach to Asthma and COPD care in Grampian
Author(s): McLaughlan K, Reilly M, Casson A, Ferguson T, Small I
Institution(s): NHS Grampian MCN

Cost effective clinical care will be a must for the modern NHS. Applying evidence based interventions is, however difficult in busy every day practice. We present a service change funded by Pharmacy budgets, addressing the needs of patients in our most challenged communities, whilst at the same time supporting clinical change and impacting on hard financial outcomes.
In Grampian, we identified that patients from a small number of practices were responsible for a combination of high drug costs and high hospital admissions/attendances for both asthma and copd.
Funding was given for a multi-disciplinary group to work across primary and secondary care to support; medicines management, discharge bundling, organised post acute review, anticipatory care, psychological intervention.
Set against non involved practices We measured reduced item costs and overall drug costs in GRIP practices, a greater reduction in admissions, improved patient and staff satisfaction and improved CAT post CBT
Lessons learned - supporting clinicians to support patients by simple interventions consistently results in hard improvements in clinical outcomes.
Lessons for others - Integrated multi-discipline work breaks down barriers and improves patient care
Conflicts of Interest:- None
Funding:- GRIP was funded directly from NHS Grampian Director of Pharmacy.

Abstract No: BP5.
Title: An audit of the effects of smoking cessation on PO2 levels in a Home Oxygen Service.
Author(s): Boardman A, Canavan M
Institution(s):

Brief outline of the context: 33.5% of patients with COPD continue to smoke (RCP,2016). The combination of smoking and LTOT can be dangerous. But the effects of stopping smoking in respiratory failure are surprisingly not known.
Analysis of the cause of the problem: Many patients when assessed for LTOT may be current smokers but may quit when told of dangers of smoking in presence of O2 along with a supportive, motivational consultation and the offer of further support.
Method: Over a 6 month period, we audited 7 smokers in a stable state who were eligible for LTOT on blood gas criteria of PO2 < 7.3. Who eventually self- reported giving up smoking on subsequent reassessment
Results: Five patients were no longer eligible for LTOT, mean pO2 at initial assessment was 6.78 and mean pO2 on second assessment was PO2 8.21. Two patients were titrated onto oxygen at the second assessment. In this time frame there were no patients who informed us they had continued to smoke.
Effects of changes: 71 % of patients who stopped smoking no longer needed LTOT. However, this was self- reported and not substantiated by CO monitoring which is a short coming of this audit.
Lessons learned: That stopping smoking is actually a potential treatment for respiratory failure.
Messages for others: Stopping smoking may avoid the need for unnecessary LTOT, saving inconvenience, cost and potential risk of oxygen with smoking. This should be emphasised as an important benefit of stopping smoking as this could be an important incentive for patients to stop smoking.
Further larger studies should be carried out with CO confirmation of cessation. If we help patients stop smoking earlier in the disease process this could avoid the need for LTOT.
Conflicts of Interest:- None
Funding:- None

Abstract No: BP6.
Title: The Impact of a Marketing Campaign on Referral Rates for Pulmonary Rehabilitation
Author(s): Austin G, Fasakin C, Stirton-Croft A, Bolas L, Bygrave L, Heaton J, Murnane D, Richardson E, Tidmarsh D
Institution(s): Hertfordshire Community NHS Trust

In spite of overwhelming evidence to support the clinical effectiveness and cost saving benefits of pulmonary rehabilitation (PR)1, referrals to the East & North Herts PR service in 2015 fell well below the 844-1255 range suggested by NICE in 20102.
Under-referral to PR is not a problem confined to Hertfordshire, but is also an issue nationally as highlighted in the 2015 British Thoracic Society national audit3 who found that there was "significant under-referral of eligible patients with COPD for PR".
What we did: In April 2015 a one year marketing campaign was run by Hertfordshire Community NHS Trust's (HCT) PR service to improve awareness, aiming to increase referrals into PR group sessions.
A variety of approaches were adopted, including displaying course information on computer and TV screens in hospitals & GP surgeries; social media activity, instigation of self-referral and a promotional video on YouTube accessible on HCT's website.
Results: Referrals for PR group sessions increased by 34% in the year March 2015-16 from 563 to 753 with a further rise of 48% to 1112 by March 2017.
Conclusions: By raising awareness of the benefits of PR, it is possible to significantly increase referrals into PR and for referrals to continue to rise beyond the one year marketing time period.
Whether there is enough momentum behind the campaign to sustain the increased number of referrals, without further marketing efforts, remains to be seen.

1. IMPRESS-improving and integrating respiratory services guide to pulmonary rehabilitation (2011) Primary Care Respiratory Society & British Thoracic Society
2. NHS England (2010/2011) East of England Commissioning Framework p29
3. Steiner M, et al. (2015) Pulmonary Rehabilitation: Time to breathe better. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Resources and organisation of pulmonary rehabilitation services in England and Wales 2015. London: RCP

Conflicts of Interest:- None
Funding:- In April 2015, HCT received funding from East & North Herts CCG to expand the number of pulmonary rehab places available from 389 to 750/year. The cost of marketing the service was included in the money provided to expand the service. Costs were however m

Abstract No: BP7.
Title: PAVAR goal setting improves health outcomes in a multidisciplinary community respiratory team.
Author(s): Marianne Milligan, Suzanne Marshall
Institution(s): NHS Glasgow, United Kingdom

Content: Goal setting is an essential component of rehabilitation, fundamental to patient centred practice. It is often hindered by vague non collaborative goals rarely involving the patient. The PAVAR approach allows goal setting tailored to individual chronic needs in which patients are proactive, take responsibility and are included in shared decision making. The five stages of PAVAR are Problem, Achieve, Value, Actions and Results. This project aimed to apply this approach to patients with severe Chronic Obstructive Pulmonary Disease.
Aim: Implement person centred goal setting PAVAR and determine it's effectiveness in patients with severe COPD in the domiciliary setting.
Method: Staff were trained on PAVAR framework (see Table 1) with weekly Peer Support meetings.
Patients were given own goal paperwork, set their own goals and worked to achieve this with team support. Patients scored their goal(s)attainment post intervention from 0% (no success) to 100% (complete success). Quality of life and impact of disease improvements were assessed using the COPD Assessment Test (CAT) pre and post intervention.
Results: Mean patient scored goal attainment was 82% in 234 patients who completed the pilot. CAT score decreased by a mean of 5 points, a change of 2 is clinically and statistically significant, p=0.001. There was a statistically significant association between goal attainment and CAT score.
Conclusion: This pilot suggests that PAVAR goal setting can improve impact of disease and quality of life in COPD. This was not a randomised controlled trial however and further work is required.
PAVAR: Problem - what is problem? Achieve - what specifically? Value - what is value? Actions - how to achieve? Results - score

Conflicts of Interest:- Nil
Funding:- Nil

Abstract No: BP8.
Title: FeNO Use in Primary Care Management of Asthma
Author(s): O'Hanlon E1, O'Neill C1, Noone A1, Hamilton L1, Heberger P1, Pearson N1, Travers A1, O'Neill M1, McManus TE2
Institution(s):
1 Omagh Health Centre, Omagh, Co. Tyrone, N. Ireland BT79 7BA
2 Department of Respiratory Medicine, South West Acute Hospital, Enniskillen, Co. Fer

Fractional exhaled nitric oxide (FeNO) has been proposed as a non-invasive marker of airway inflammation in asthma. FeNO levels are raised in people with uncontrolled asthma and can be lowered by effective treatment with corticosteroids.
This study was a pilot project utilising FeNO measurement as an asthma management tool in primary care. Asthma patients attending the practice nurse for annual review or as a result of being symptomatic were offered FeNO measurement.
From 125 patients tested, 39 had an elevated FeNO and were invited for follow up measurement. Where FeNO level was elevated patients were offered appropriate therapeutic intervention and patient education. Mean age of patients was 36.0 years, range 9.5 – 78.9 years. The median FeNO measurement before / after intervention and education was 72 / 45 ppb, p-value of < 0.001 [Wilcoxon Rank Sum test].
This study demonstrates that elevated FeNO levels can be reduced significantly with appropriate intervention, including patient education. Further research is required in order to understand the components contributing to the reduction in FeNO levels (behavioural v pharmacological).

Conflicts of Interest:- None
Funding:- The equipment (FeNO machine) was funded via a Medical Education and services grant by Napp Pharmaceuticals Ltd

Abstract No: BP9.
Title: Effectiveness of a community based pulmonary rehabilitation (PR) programme for patients with chronic obstructive pulmonary disease (COPD): A retrospective review
Author(s): Perryman S, Rajput S
Institution(s): HCPC and CSP

There has been little evidence on efficacy of PR after an AECOPD on readmission rates to hospital. The aim of this study was to assess whether a comprehensive care programme would decrease hospital readmissions for patients with COPD.
Methods: 700 admission episodes were identified from the hospital database with diagnosis of AECOPD in 2015. 60 patients were randomly selected, 30 who had attended PR post hospital discharge and 30 who had not. All individuals were reviewed post hospital discharge by a respiratory practitioner and were offered PR, education regarding inhaler technique and exacerbations and a follow up in a respiratory clinic 6-8 weeks' post PR. The primary outcome was hospital readmissions rate at 12 months.
Results: The baseline characteristics were similar although the non-PR group had a higher mMRC score (4.4 vs 3.3) and BORG score (1.4 vs 0.9). The PR group showed a greater improvement in 6 MWT (mean change of 43m), stress and depression score. In the group that attended PR, the average readmissions to hospital was 1.5 compared to 5.2 for the non-PR group at 12 months. There were 15 deaths in the non-PR group compared to none in the PR group.
Conclusions: A comprehensive PR programme with regular review can reduce hospital readmissions and mortality for COPD patients in the year following PR.
Conflicts of Interest:- None
Funding:- No additional funding was required, data was taken during normal practice of the respiratory team.

Abstract No: S7.
Title: Improving prescribing and medicines use in Asthma patients following The National Review of Asthma Deaths
Author(s): Jennifer Barklie, Practice Nurse, Patrick Moore, Practice Pharmacist
Institution(s): The Mount Practice Belfast

The January 2015 NI Medicines Management Newsletter Supplement 'Why Asthma Still Kills NRAD' highlighted a number of points in relation to prescribing and medicines use for asthma patients.
NRAD focused on 195 asthma deaths, making key recommendations for prescribing and medicines use.
All asthma patients prescribed more than 12 SABA reliever inhalers in the previous 12 months should be invited for urgent review, with the aim of improving their asthma through education and change of treatment if required.
An assessment of inhaler technique to ensure effectiveness should be routinely undertaken and formally documented at annual review.
Non-adherence to preventer inhaled corticosteroids is associated with increased risk of poor asthma control and should be continually monitored.
The use of combination inhalers should be encouraged. Where LABA bronchodilators are prescribed for people with asthma, they should be prescribed with an inhaled corticosteroid in a single combination inhaler.
To ensure best practise all asthma patients were identified by the practice pharmacist and called to see the practice nurse where appropriate. SABAs were removed from repeat medication lists and requests forced through the Practice Nurse.
Overuse of SABA – Audit post review demonstrated a 34.7% reduction in prescribing.
Lack of Documented Inhaler technique – As a result of face to face reviews of all SABA users the Practice can be confident that inhaler technique has been comprehensively assessed.
Non-Adherence with ICS – Importance of 'preventer' medication was reinforced at reviews, and a measure of improved adherence is a reduced requirement of SABA.
LABA not in combination with ICS – Several patients were identified, all were reviewed and are now receiving combination therapy, or where appropriate stepped-down.
A strategic collaborative approach to asthma management can produce significant improvement in patient care.
NI Formulary (2015). Why Asthma Still Kills NRAD http://niformulary.hscni.net/PrescribingNewsletters/MedicinesManagement/supplement/asthma/vol6S1/Pages/default.aspx
RCP, (2014). NRAD. https://www.rcplondon.ac.uk/projects/national-review-asthma-deaths
Conflicts of Interest:- None
Funding:-

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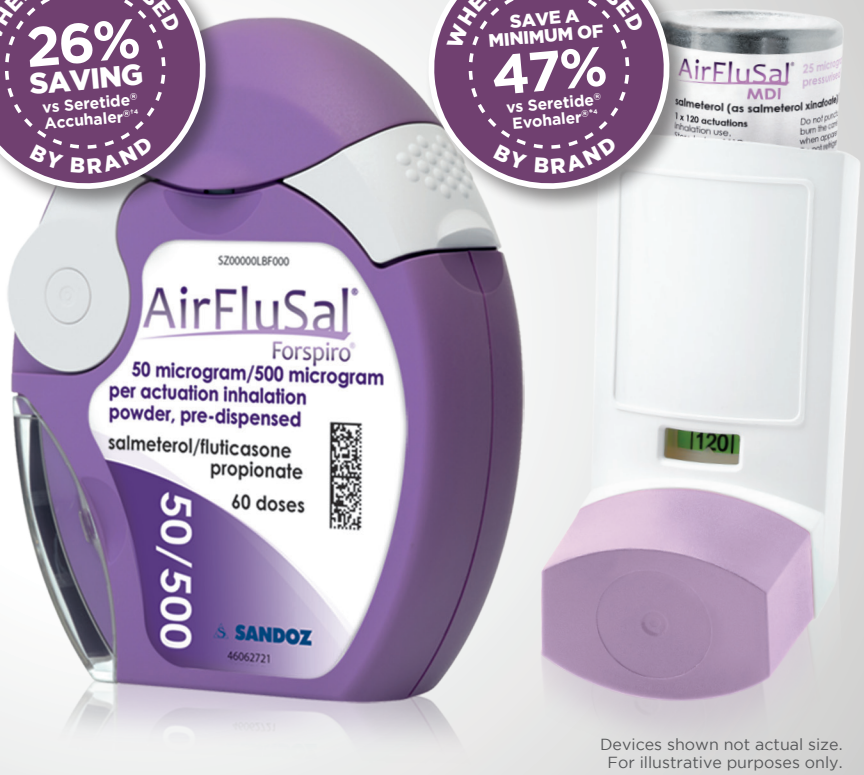

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An increase in the incidence of pneumonia, including pneumonia requiring hospitalisation, has been observed in patients with COPD receiving inhaled corticosteroids. Physicians should remain vigilant for the possible development of pneumonia in patients with COPD. Risk factors for pneumonia in patients with COPD include current smoking, older age, low body mass index (BMI) and severe COPD. Paradoxical bronchospasm post-dose. *Severe unstable asthma:* Warn patients to seek medical advice if short-acting inhaled bronchodilator use increases. Consider increased inhaled/additional corticosteroid therapy. *Acute symptoms:* Not for acute symptoms. Use short-acting inhaled bronchodilator. *Systemic effects:* Systemic effects of inhaled corticosteroids may occur, particularly at high doses for prolonged periods, but much less likely than with oral corticosteroids. May include Cushing's syndrome, Cushingoid features, adrenal suppression, adrenal crisis, growth retardation in children and adolescents, decrease in bone mineral density, cataract, glaucoma and, more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression or aggression. Tremor, palpitations and headache, have been reported with β2 agonist treatment. In asthma, therapy should be down titrated under physician supervision to lowest effective dose and treatment should not be abruptly stopped due to risk of exacerbation. Serious asthma-related adverse events and exacerbations may occur during treatment with AirFluSal Forspiro and AirFluSal MDI. Patients should not be initiated on AirFluSal Forspiro and AirFluSal MDI during an exacerbation or if they have significantly worsening or acutely deteriorating asthma. Data from a large clinical trial suggested patients of black African or Afro-Caribbean ancestry were at increased risk of serious respiratory-related events or deaths when using salmeterol. All patients should continue treatment but seek medical advice if symptoms remain uncontrolled or worsen when initiated on AirFluSal Forspiro or using AirFluSal MDI. In COPD cessation of therapy with AirFluSal Forspiro may also be associated with decompensation and should be supervised by a physician. *Transfer from oral steroids:* Special care needed. Consider appropriate steroid therapy in stressful situations. **Drug interactions:** Avoid beta-blockers. Avoid concomitant administration of ketoconazole or other potent (e.g. itraconazole, telithromycin, ritonavir) and moderate (erythromycin) CYP3A4 inhibitors and unless benefits outweigh potential risk. β2 adrenergic blockers may weaken or antagonise the effect of salmeterol. Potentially serious hypokalaemia may result from β2 agonist therapy, particular caution is advised in acute severe asthma. This effect may be potentiated by concomitant treatment with xanthine derivatives, steroids and diuretics. **Pregnancy and lactation:** Experience limited. Balance risks against benefits. **Side effects:** *Very Common:* headache, nasopharyngitis. *Common:* candidiasis of the mouth and throat, hoarseness/dysphonia, throat irritation, pneumonia, bronchitis, hypokalaemia, sinusitis, contusions, traumatic fractures, arthralgia, myalgia, muscle cramps. *Uncommon:* respiratory symptoms (dyspnoea), anxiety, tremor, palpitations, tachycardia, angina pectoris, atrial fibrillation, cutaneous hypersensitivity reactions, hyperglycaemia, sleep disorders, cataract. *Rare:* angioedema, respiratory symptoms (bronchospasm), anaphylactic reactions including anaphylactic shock, Cushing's syndrome, Cushingoid features, adrenal suppression, growth retardation in children and adolescents, decreased bone mineral density, oesophageal candidiasis, behavioural changes including psychomotor hyperactivity and irritability, glaucoma, cardiac arrhythmias and paradoxical bronchospasm. *Not known:* depression or aggression. *Paradoxical bronchospasm:* substitute alternative therapy. Prescribers should consult the SPC in relation to other adverse reactions. **Legal category:** POM. **Presentation and Basic NHS cost:** AirFluSal Forspiro 50/500, 60 inhalations, £29.97; AirFluSal MDI 25/125, 120 inhalations, £18.50; AirFluSal MDI 25/250 120 inhalations, £29.95. **Marketing authorisation number: AirFluSal Forspiro; AirFluSal MDI 25/125; AirFluSal MDI 25/250:** PL 04416/1431; PL 04416/1475, PL 04416/1476. **Marketing authorisation holder:** Sandoz Ltd, Frimley Business Park, Frimley, Camberley, Surrey. GU16 7SR. **Last date of revision:** October 2017. UK/P/AFS/17-0029(2).

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 Sandoz Ltd, 01276 698020 or uk.drugsafety@sandoz.com

References: 1. AirFluSal® Forspiro® SmPC. **2.** AirFluSal® MDI 25/125 SmPC. **3.** AirFluSal® MDI 25/250 SmPC. **4.** MIMS Online (www.mims.co.uk), October 2017.
[†]Seretide®, Accuhaler® and Evohaler® are registered trademarks of the GlaxoSmithKline Group of Companies.
[‡]DPI = Dry Powder Inhaler. [‡]MDI = Pressured Metered Dose Inhaler. [§]LABA = Long-acting beta$_2$-adrenoceptor agonist.
[§]ICS = Inhaled Corticosteroid.

[†]Airflusal® Forspiro® 50/500µg vs Seretide® Accuhaler® 50/500µg.
*Airflusal® MDI 25/125µg and 25/250µg vs Seretide® Evohaler® 25/125µg and 25/250µg.

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