**Session P8 Organisation of care**

**128: An outcome evaluation of a local respiratory support service**
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*Aim:* Domiciliary nocturnal non-invasive ventilation (NIV) for the management of chronic hypercapnic respiratory failure remains inconsistent and limited. This study tested the hypothesis that a local domiciliary nocturnal NIV for chronic hypercapnic respiratory failure patients was a worthwhile intervention, by reducing hospital admissions and changing daytime blood gases. The physiological impact on the patients and reduction in hospital admissions were audited before and after initiation of domiciliary nocturnal non-invasive ventilation.

*Method:* This was a retrospective service evaluation of 20 patients who had commenced domiciliary nocturnal NIV for longer than 4 weeks and continued for up to 3 years. Case note analysis of daytime capillary blood gases (CBGs) pre and post-commencement of domiciliary nocturnal NIV were included. Using the hospital Oasis system, in addition to exploration of hospital case notes, to determine reasons for and numbers of hospital admissions one year pre and post-commencement of domiciliary nocturnal NIV. An Encore Pro database was utilised to download the smartcard taken from the patients NIV machine.

*Results:* Domiciliary nocturnal NIV with mean inspiratory/expiratory pressures (IPAP/EPAP) of 21±2/9±2 cmH$_2$O and mean pressure support (PS) of 12±2 cmH$_2$O led to statistically significant improvements in daytime blood gases and hospitalisation rates. A statistically significant increase in daytime PaO$_2$ values p<0.001 and a decrease in daytime PaCO$_2$ values p<0.001 was observed following domiciliary nocturnal NIV. A significant reduction in hospital admissions for cardio respiratory conditions in the year following domiciliary nocturnal NIV p<0.005 was detected.

*Conclusion:* High intensity domiciliary nocturnal NIV (HI-NIV) improves daytime CBGs and reduces hospital admissions for a group of patients with chronic hypoventilation secondary to COPD, OHS ± OSA, OL and kyphoscoliosis. A small general hospital can provide a worthwhile long term domiciliary NIV service for local patients

**Conflict of interest and funding:** no funding

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**159: The UK Primary Care Respiratory Quality Award**
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Primary Care Respiratory Society UK

*Brief outline of context:* UK Primary Care delivers a minimum standard of quality through its national outcomes framework.

*Brief outline of what change you planned to make:* Develop and implement a quality primary respiratory care award

*Assessment of existing situation and analysis of its causes:* A multi-agency Quality Award Development Group formulated the standards, set down the framework for submission and assessment and tested the award in practice

*Strategy for change:* Award content is as follows Module 1: Clinical  • 1.1 The Practice demonstrates a Health Promotion policy to prevent respiratory disease.  • 1.2 The practice has a system for early and accurate diagnosis of respiratory disease  • 1.3 COPD and asthma patients are offered regular structured review.  • 1.4 Practices have an effective system for the recognition, assessment and immediate management of patients with acute respiratory problems Module 2: Organisational  • 2.1 Practices have access to, and can use effectively, equipment necessary to assess, diagnose, review and treat patients with respiratory conditions Module 3: Practice Team  • 3.1 The Practice works in an effective, comprehensive multi-disciplinary way to meet the needs of respiratory patients, supporting staff to fulfill their role, working across organisational boundaries to benefit patients and staff  • 3.2 People with respiratory disease should have access to an effective, coordinated service provided by appropriately skilled health care professionals

*Measurement of improvement:* The award has now been tested successfully

*Effects of changes:* Achieving award status has significantly benefitted practices and patients

*Lessons learnt:* The three components of the system (development, submission and assessment) are robust, achievable and reproducible.

*Message for others:* Practices achieving this standard provide a quality service, that is likely to provide care consistent with national and international objectives

*Conflict of interest and funding:* The award was developed in association with PCRS UK, Education for Health, Respiratory Education UK, Asthma UK, British Lung Foundation, British Thoracic Society, Royal College of General Practitioners, Association of Respiratory Nurse Specialists The Award is supported by project grants from Allen & Hanburys, the specialist respiratory division of GlaxoSmithKline UK Ltd, AstraZeneca UK Ltd, Boehringer Ingelheim Ltd / Pfizer Ltd, Chiesi Ltd, MSD UK Ltd, Napp Pharmaceuticals and Teva UK Limited

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**200: Variation in availability of pulse oximetry in UK practice**  
Holmes S, McArthur R, Small I  
Primary Care Respiratory Society UK

**Aim:** To determine the availability of pulse oximetry in primary care practices in the United Kingdom

**Method:** Despite widespread agreement that pulse oximetry is a useful clinical assessment tool within the UK there has been a variety of research showing variable access in primary care. More recently in Essex (ERS Abstract, 2011) in 60 practices 33% had no oximeter (20 practices). In July 2011 we provided an on-line survey for members of the Primary Care Respiratory Society to highlight whether they have access to pulse oximetry within their work environment.

**Results:** We had results from 322 practices. 98.1% of practices had a pulse oximeter (316). 70.4% of practices had easy access in their consulting rooms all the time with 5.3% not having easy access in their consulting room. This figure dropped when easy access all the time when on routine and urgent visits (62.8%) When asked about confidence of the team in use of pulse oximetry (n=321) 3.1% of responses indicated they were unsure how well the team were able to use oximetry – but 96.9% were assured that use was competent.

**Conclusion:** The up to date survey from PCRS members and their practices are much closer to the national guidelines and use than were found in the smaller survey in Essex. Most PCRS UK practices have easy access to pulse oximetry. It does indicate that it would be hard to justify not having access to pulse oximetry.

**Conflict of interest and funding:** This on line survey was funded by PCRS. Conflict of interest declarations for the three authors are declared as part of the PCRS charity.

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**201: Availability and use of spirometry in PCRS member practices in UK general practice 2011**  
Holmes S, McArthur R, Small I  
Primary Care Respiratory Society UK

**Aim:** Availability and use of spirometry in PCRS member practices in UK general practice 2010

**Method:** In July 2010 we surveyed our membership to establish use of spirometry in practice as well as training in undertaking of the procedure and reading of spirometry.

**Results:** We had results from 313 practices. 97.8% of practices had spirometry. Calibration usually took place according to manufacturers instructions (92.6%) though in 3.5% this did not happen and 3.9% of responders did not know. 60.6% had more than 5 years of experience in undertaking spirometry and 52.2% had more than 5 years experience interpreting. We found that 12.1% of people had neither training nor assessment of their competence in the last three years. The figure relating to interpretation rose to 16.2% who had not had training or assessment in the last three years.

**Conclusion:** Most practices have access to spirometry, and calibrate in accordance with the manufacturers instructions. The workforce in the majority of situations is experienced and has been trained though there is still room for improvement.

**Conflict of interest and funding:** Conflict of interest declarations are declared annually to PCRS =UK

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Using Cochrane reviews to support decision-making
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Aim: Results from clinical trials can appear impressive, but are results from a single trial enough to justify a change clinical practice? The Cochrane Collaboration supports the production and publication of systematic reviews of interventions ranging from drugs to education to physiotherapy. Systematic reviews summarise evidence from multiple clinical trials according to pre-specified methods and frequently incorporate meta-analysis. Cochrane Airways Group reviews cover lung and respiratory diseases such as asthma, COPD, bronchiectasis and idiopathic pulmonary fibrosis. Here we present the results of a review on asthma education delivered in the home and considers implementation in practice.

Method: We conducted a systemic review of randomised trials of asthma education delivered in the home to children, caregivers or both compared to a control group receiving either usual care or similar education in an alternate setting.

Results: We included evidence from 12 studies involving 2342 children. The studies were of good methodological quality and 11 were conducted in North America in urban or suburban settings in vulnerable populations. Trials differed in age of the children, severity of asthma and content of the educational interventions. These differences were too large to allow reliable interpretation of an overall average result.

Conclusion: There is inconsistent evidence for home-based asthma educational interventions. Although education remains a key component of managing asthma in children, advocated in guidelines, this review does not distinguish whether there is an important impact in delivering education in the home instead of more usual settings such as GP clinics or the ED.

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Analysis of dyspnea dealt with by a primary care emergency response unit in an urban area
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Aim: Analyse patients with dyspnea in our environment: main diagnoses and socio-demographic profile.

Method: Descriptive transversal study. Revision of patients attended with dyspnea by outpatient primary care team, in 4 months in our city. Variables: age, sex, time of calling, diagnosis and referral.

Results: The profile of patients were: 51,5% men and 48,4% women. Age: 46,3% more than 80 years old; 70 to 80: 28,6%; 60 to 69: 10,9%; 50 to 59: 4,1%; 40 to 49: 2,08%; 15 to 39: 3,6%; and less than 15, 4,1%. Time-calling: From 8:00 to 15:00 hours: 34,3%; 15:00 to 00:00: 27%; 00:00 to 8:00: 38,5%. The diagnosis were: COPD exacerbation: 24,47%; acute heart failure: 18,22%; pulmonary aedema: 4,16%; high airway infection: 2,6%; acute bronchitis: 8,33%; pneumonia: 13,02%; asthma: 3,12%; anxiety: 12,5%; oncological causes: 5,2%; deceased: 1,56%; other : 6,77%. The most common causes of dyspnea were: more than 60 years old: COPD-E (23,9%) and acute heart failure(18,2%); 15 to 40: anxiety (3,64%); and less than 15: asthma (2,6%). 38,02% were remained at home; 33,3% were transported to hospital in a conventional ambulance and 28,64% with a medical team.

Conclusion: Most common causes of dyspnea calls in primary care in our environment are COPD-E, acute heart failure and pneumonia. The profile of patient is a male or female with more than 65 years old who requires assistance at nights. The majority are referred to hospital. The majority of COPD patients are male, the majority of anxiety ones are female, and there is not a high differences between men and women with acute heart failure.

Conflict of interest and funding: None

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289: Algorithm for identification and review of patients on high dose inhaled corticosteroids
Gaduzo S, Wilson J

Research question: How do we identify patients in general practice on high dose ICS and review the appropriateness of their treatment?

Background: Quality & Outcomes Framework, NICE quality standards and treatment guidelines suggest regular review of patients with COPD and asthma. Recall of patients to be reviewed is not always pro-active or structured. Prioritising those on high dose ICS would help identify patients with the wrong diagnosis, inappropriate prescribing, (eg: ICS alone for COPD), and failure to step down treatment for asthma.

Possible methodology: An algorithm was developed and lists of Read codes applicable to data extraction from GP clinical computer record systems were applied to 4 arms: High dose ICS alone, in combination with long-acting beta-agonist, for asthma and COPD. This is being piloted at CMP and other practices in the locality.

Questions to discuss: Initial reports suggest it facilitates data extraction and prioritised patient recall. Is this applicable and useful on a larger scale? We think it will also help to reduce QOF exception rates.

Conflict of interest and funding: None

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291: Adoption of admission and discharge bundles for COPD patients
Gaduzo S, Roberts R, Fern K, Monkhouse R, Dev D
NHS Stockport

Brief outline of context: Discharge bundles have been shown to reduce re-admission rates. Admission and length of stay protocols are also being piloted. We set out to combine both bundles by consensus between all stakeholders, including patients and primary care.

Brief outline of what change you planned to make: Stockport Integrated Respiratory Network has a core group consisting of clinicians and managers from primary and secondary care. We convened a larger group with representation from emergency department, acute medicine, respiratory medicine, senior nurses from respiratory ward and community team, GPwSI, hospital management and primary care commissioners. The original protocols were reviewed and altered to make them locally relevant and implementable. We also consulted local Breathe Easy patient group and GPs at locality meeting.

Assessment of existing situation and analysis of its causes: Stockport has above average length of stay. There is no set protocol for assessment of patients on arrival at hospital. There is poor understanding among GPs of secondary care processes.

Strategy for change: Use of bundles commenced in November 2011

Measurement of improvement: Initially uptake of bundles, later we will measure effects on length of stay and re-admissions.

Effects of changes: We hope use of bundles will become the cultural norm, leading to improved patient outcomes

Lessons learnt: Existing bundles can be adapted for local use

Message for others: Work together and involve all stakeholders in development

Conflict of interest and funding: None

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293: Skimming stones model of clinical engagement
Gaduzo S, Roberts J, Williams J, Sud P
NHS Northwest

Brief outline of context. In 2010 DH national and SHA regional respiratory leads were appointed. Our survey of Northwest PCTs and hospital trusts highlighted variation in respiratory services provided, and arrangement for integrated working.

Brief outline of what change you planned to make. We aimed to improve services by local action planning

Assessment of existing situation and analysis of its causes: Our survey found 30% never met and a further 25% only met when there was a crisis to manage. Our medical director contacted FTs and PCTs asking them to put together teams of clinicians and managers across primary and secondary care, to attend regional meetings and work on integration issues.

Strategy for change: We organised a series of clinical best practice and networking meetings on respiratory care including pulmonary rehabilitation, early supported discharge, early diagnosis, admission avoidance, self-management, medicines management. Teams were sat together geographically, many were meeting for the first time. Keynote address was followed by discussions sharing best practice and workshops formulating action plans. We regularly followed these up, asking for progress reports. Teams were also encouraged to hold similar meetings in their locality, continuing to spreading innovative work down to individual practice or unit level.

Measurement of improvement. Our web-based community of practice has >260 members, including most attendees; it houses data, presentations, action plans, discussion forum

Effects of changes: Action plans have led to setting up of services where gaps were identified, piloting of admission and discharge bundles, local networks, reduced oxygen prescribing costs, publication of local work.

Lessons learnt. We call this “Skimming Stones” model of stakeholder engagement

Message for others: Multiple points of impact with serial action plans can lead to improved care pathways and patient care

Conflict of interest and funding: None

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295: Patient consultation in development of COPD self-management plan
Gaduzo S, O'Hara D
NHS Stockport

Brief outline of context. Various self-management action plans (SMP) are in use in UK. Stockport community respiratory team use our own version of the PCRS SMP developed in Plymouth. Uptake and use outside our team is disappointing.

Brief outline of what change you planned to make. We wanted to involve patients in development of a new SMP acceptable in both primary and secondary settings.

Assessment of existing situation and analysis of its causes: Comments from patients suggested it’s too “wordy” and a simpler design would make it easier to use.

Strategy for change: Patients consulted in Breathe Easy and pulmonary rehabilitation settings suggested use of the term “warning signs”, and greater prominence of the traffic light action plan graphic. Primary and secondary care doctors and nurses were also consulted. A final version was agreed by consensus and produced with assistance from IT department.

Measurement of improvement. The final document was approved by all stakeholders, praised for its clarity and embraced enthusiastically. Pharmaceutical company sponsorship was obtained for a large print run, there’s been high demand from both primary and secondary care.

Effects of changes: The Stockport SMP has been adopted by all parts of the local healthcare community as part of the integrated pathway. Three of the four GP localities have decided use of SMP will form part of local targets the new QIPS section of QOF.

Lessons learnt. Involvement of all stakeholders, including patients, proved very rewarding and greatly enhanced the final product.

Message for others: Development of patient resources should involve all stakeholders

Conflict of interest and funding: Chiesi pharmaceuticals paid for SMP printing

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309: Benefits of a multi-skilled, multi-professional team delivering care for patients with respiratory disease.
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Respiratory Chartered Physiotherapist Clinical Lead Warrington and Halton Hospitals NHS Foundation Trust

Brief outline of context: A team of clinicians (physiotherapists & nurses) established to reduce hospital admissions for patients with exacerbations of COPD. It was the first team in the UK that assessed the patient at home. This approach was expanded to include patients with all respiratory diseases.

Brief outline of what change you planned to make: To develop a gold standard of respiratory care for admission avoidance, early supported discharge, pulmonary rehabilitation, oxygen service, non-invasive ventilation service, advising palliative care teams, clinics, utilising the same multi-disciplinary team.

Assessment of existing situation and analysis of its causes: Existing service delivery relied on clinicians working independently. Absences meant services were cancelled, waiting lists grew, patients received a disjointed service. Peer review and benchmarking was limited. A visit to Canada to research respiratory therapy practice acted as a catalyst to change.


Measurement of improvement: Patient satisfaction questionnaires, higher number of patients seen in all areas with retention of staff, good feedback from users.

Effects of changes: Sharing of skills has improved the delivery of seamless episodes of care, services are never cancelled and staff enjoy a wider variety of skills.

Lessons learnt: Inter-professional boundaries can be overcome.

Message for others: Integrated working improves the quality of patient care and expands the horizons of clinicians aspirations.

Conflict of interest and funding: None

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319: Audit of inhaler technique
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Aim: Inadequate inhaler technique in patients with chronic respiratory conditions is a common problem and can result in poor drug delivery. Many patients are not receiving inhaler technique instruction and many have not had their technique checked. Educating patients on inhaler technique has been shown to improve patients' technique and has consequently also improved symptom severity in some cases. This audit aimed to assess whether patients with chronic respiratory conditions have had their inhaler technique assessed when first prescribed their inhaler and in the last 12 months, and whether their inhaler technique is adequate.

Method: A questionnaire and assessment of inhaler techniques in patients on a hospital respiratory ward was performed on 31st October 2011.

Results: Overall, 50.3% of inhaler devices were demonstrated poorly. 50% of inhaler devices were not demonstrated to the patient when first prescribed, which is not compliant with the NICE COPD and BTS Asthma guidelines that specify that all patients prescribed inhalers should have inhaler technique demonstrated. Of these inhaler devices, 53.8% were demonstrated with poor technique. Similarly, 57.7% of inhaler devices had not been demonstrated to patients within the past 12 months, and 80% of these inhaler devices were demonstrated poorly, showing the need for regular inhaler technique counselling.

Conclusion: The results of this audit suggest a great need for tuition in inhaler technique and its regular assessment. Recommendations from this audit are for the hospital pharmacist to aim to assess all patients' inhaler technique on admission to the respiratory ward, and counsel if necessary. Inhaler technique will then be re-audited in three months time.

Conflict of interest and funding: None

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