COPD: doing what works

S1 A 20 YEAR EXPERIENCE OF STAGED BILATERAL LUNG VOLUME REDUCTION FOR EMPHYSEMA – THE LONG TERM BENEFITS OF COMBINED SURGICAL AND ENDOBRONCHIAL TECHNIQUES

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We made a decision early in our lung volume reduction (LVR) experience to offer a staged bilateral approach with the timing of each additional intervention determined by patient choice and have latterly incorporated the use of endobronchial valves into this protocol. We have analysed the long-term effect on patient outcome of this novel approach. Over a 20 year period 329 LVR procedures were performed on 256 patients (157 male, 99 female, median age 61 [23–79] years) by a single surgeon in one institution. Baseline lung function showed predicted values (mean $\pm$ SE): FEV1 28 (11)%, RV 253 (53)%, DLCO 39 (39)%. 64 patients have received a second LVR and 13 a third LVR procedure (fig). Median time between first and second stage was 3.8 (0.1–12.5) years. The time interval between 2nd and 3rd stage was 2.7 (0.2–5.2) years. Median time interval between 1st and 3rd stage was 5.8 (1.9–10) years. Overall 30 day mortality was 3% (20% after open, 3% after VATS and 3% after EBV). Median overall survival was 5.6 (95% CI 4.7–6.9) years. In the subgroup of patients who underwent staged procedures there was a significant improvement in mean predicted FEV1 from 28% at initial baseline to 34% at 6 years. There was a sustained reduction in static lung volumes up to 8 years: predicted TLC remained reduced from 143% to 123% and predicted RV from 259% to 189%. The physiological improvements after first and second stage were similar. There were also sustained improvements over initial baseline in health status as assessed by Euroqol for 5 years [50 ($\pm$ 26) to 62 ($\pm$ 23), $p < 0.001$] and in SF36: perception of the physical role was significantly improved for up to 7 years, social functioning for 8 years. Energy levels remained significantly higher for 9 years with 20% of patients scoring better than preoperatively. A staged unilateral video assisted surgical and endobronchial approach to lung volume reduction dictated by the patient is justified by a sustained benefit for up to 9 years in physiology and health status in patients with severe emphysema who had already received maximal medical therapy.

Abstract S1 Figure 1 All LVR procedures.

S2 THE IMPACT OF PULMONARY REHABILITATION (PR) COMPLETION AND OUTCOME ON SUBSEQUENT HOSPITAL ADMISSIONS IN PATIENTS WITH COPD. RESULTS FROM THE NATIONAL COPD AUDIT

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Introduction Clinical trials suggest attendance at PR reduces subsequent hospitalisation rates. However, whether this benefit occurs in routine clinical practice is uncertain. We analysed admission rates and days spent in hospital 90 and 180 days after assessment for PR in the 2015 national PR audit cohort. **Methods** PR services across England and Wales provided data for all consenting patients assessed for PR between Jan and April 2015. Cumulative rates of admission to hospital and numbers of days spent in hospital at each timepoint (and between the 90 and 180 day timepoints) were extracted from Hospital Episode Statistics (HES) and compared between patients who did and did not complete PR and between those reaching and not reaching accepted thresholds for clinically important improvements (MCIDs) in exercise and health status measures.

Results Data for 7135 patients included in the audit in England were extracted. Overall admission rates (proportion with at least one admission) were 18.6% and 29.6% at 90 and 180 days respectively. At each timepoint, completion of PR (defined by there being a discharge assessment) was associated with a reduced risk of admission to hospital (compared with non-completion) (90 days: 13.1 vs 26.4%; 180 days: 23.7 vs 37.9%; 91–180 days: 15.0 vs 21.7%; all $p < 0.001$) and reduced days spent in hospital (90 days: Mean 3.1 vs 7.1 days; 180 days: mean 4.8 vs 9.4 days; 91–180 days: 4.91 vs 7.6 days; all $p < 0.001$). Reaching the MCID for exercise measures after completion of PR was associated with reduced risk of admission at 180 days (and 91–180 days) ($p < 0.05$) but not reduced days spent in hospital. Changes in health status measures were not associated with admission rates or days spent in hospital.

Conclusion Successful completion of PR is associated with reduced risk of hospitalisation and reduced days in hospital up to 180 days after assessment. Although some of this effect may be due to case-mix variation, actions to enhance uptake and completion rates for PR may be effective measures to reduce health care resource utilisation for patients with COPD.

S3 CLINICAL CULTURES AND THE SENSATION OF BREATHLESSNESS

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Introduction and Objectives Our Wellcome Trust funded project, the *Life of Breath*, takes as its starting point the problem of symptom discordance between clinically measured lung function and patient experience. Clinicians have long recognised the influence of thoughts and emotions on symptom of breathlessness. Recent work in neuroscience, exemplified in the ‘multidimensional model’ of breathlessness proposed by

Lansing et al.,¹ has developed this as a material concern, although it leaves unexamined the social, cultural and linguistic fields at work in such thoughts and emotions. This paper proposes to extend the multidimensional model to take into account the wider dimensions of life experience informing the sensation of breathlessness.

Methods We take an interdisciplinary approach that combines material from cultural contexts, clinical accounts and ethnographic work. Cultural readings and ethnographic work demonstrate that breathlessness is imagined and expressed in very different ways outside the clinical context. This corroborates clinical accounts about the significant role background culture has in determining how the symptom of breathlessness is expressed, understood and examined. Nevertheless three clinical cultures overwhelmingly determine contemporary responses to breathlessness: neuroscience, hospital specialist medicine and palliative care. We describe these cultures and argue that no single approach is enabling progress for patients.

Results Our interdisciplinary approach extends understandings of the experience of breathlessness by challenging the linear relationship between sensation and affect described by Lansing. Our findings cluster under three main headings: 1) the language of breathlessness; 2) breathlessness as analogy; and 3) breath awareness, including rhythm.

Conclusions Our research opens out the potential for wider explorations of the symptom of breathlessness that offer an explanation for symptom discordance. Our findings on language suggest reasons for the current poor uptake of pulmonary rehabilitation, and our research on the relationship between experience and sensation point to the potential value of new approaches that might be more acceptable to patients.

REFERENCE

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S4

A RANDOMISED CONTROLLED TRIAL (RCT) OF COGNITIVE BEHAVIOURAL THERAPY (CBT) FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Background Anxiety and depression are common co-morbidities in COPD. We conducted a RCT comparing CBT delivered by respiratory nurses (RNs) and self-help leaflets in 279 patients with COPD and anxiety. The CBT intervention delivered by RNs achieved clinical and statistical improvements for anxiety, depression and improving quality of life.¹ RNs with dual physical and psychological skills are rare. However there is an appetite for RNs to be trained to identify and treat psychological difficulties experienced by respiratory patients using CBT.²

Aims To evaluate the effectiveness of The Lung Manual Intervention used in The Newcastle COPD CBT Care study¹ on patient outcomes when delivered by nurses who completed 3 day foundation training compared to advanced post-graduate education in CBT.

Methods Following an educational course, four respiratory nurses delivered The Lung Manual Intervention.¹ Four nurses were randomly allocated patients and delivered CBT. Nurses with Diploma

training delivered CBT to 83 patients; foundation level delivered 32. CBT sessions were audio-recorded to explore delivery of the intervention in practice. The recordings were then assessed fidelity of intervention delivery by an independent CBT therapist. Unpaired *t*-tests were used to compare mean anxiety scores and at baseline and three months.

Results The nurses competency was rated highly by an independent CBT therapist. The mean number of CBT sessions was 4 and this was similar for all nurses. Table 1 summarises the outcome from nurses delivering The Lung Manual CBT intervention.

Conclusion Brief education in CBT was effective in improving patient symptoms of anxiety at three months. RNs with dual skills in physical and psychological well being may be an appropriate model to provide holistic care for patients with COPD.

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2. Heslop-Marshall K, Knighting K, Pilkington M, Kelly C. A UK survey on the experiences and views of Respiratory Nurses (RNs) on their role in delivering Cognitive Behavioural Therapy (CBT) for patients with Chronic Obstructive Pulmonary Disease (COPD) 2017. In press.

Abstract S4 Table 1 Summary of outcome from RNs delivering the lung manual intervention based on level of training

Level of Training	Number of patients/ (percent)	Mean HADS-Anxiety/ SD at baseline	Mean HADS-Anxiety at Three months	Mean Difference at three months	p-value	(95% CI)
Diploma level	83 (72)	12.3 (3.11)	8.93 (4.36)	3.37	<0.001	2.43–4.34
Foundation level	32 (28)	12.2 (3.26)	8.8 (4.92)	3.41	<0.001	2.05–4.76

S5

SMOKING CESSATION EXPENDITURE IN SECONDARY CARE WITHIN LONDON – WHO ARE SUPPORTING SICK SMOKERS?

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Introduction In 2010, 17% of hospital inpatients in England were current smokers, equating to 1.1 million individuals.¹ In November 2013, NICE published guidance on stopping smoking in secondary care, recommending the routine and systematic delivery of stopping smoking support to all smokers in acute, maternity and mental health settings. Patients who smoke should be offered stop smoking medications, nicotine patches, and counselling as soon as they are admitted, encouraging them to quit. We undertook an audit of secondary care trusts in London to see how much stop smoking medications were being provided.

Methods The London Procurement Partnership has access to drug expenditure data for all Trusts and CCGs within the London area. We calculated the total expenditure for all nicotine replacement products including varenicline and bupropion between April 2016 April 2017 in each trust.