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.

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S4

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

¹K Heslop-Marshall, ¹C Baker, ^{3,4}D Carrick-Sen, ²J Newton, ¹C Stenton, ¹G Burns, ²A De Soya. ¹Newcastle upon Tyne NHS Foundation Trust, Newcastle upon Tyne, UK; ²Newcastle University, Newcastle upon Tyne, UK; ³University of Birmingham, Birmingham, UK; ⁴Heart of England NHS Trust, Birmingham, UK

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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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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?

¹V Mak, ²S Hopkins, ²D Attar-Zadeh. ¹Imperial College Healthcare NHS Trust, London, UK; ²London Procurement Partnership, London, UK

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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.

Abstract S5 Figure 1 Secondary care smoking cessation product expenditure 2016/2017.

Results There was a 90-fold variation in expenditure on stop smoking products across London secondary care trusts (graph 1). Some of the highest expenditure was in trusts dealing with mental health. Comparing similar sized organisations to correct for bed numbers; within major teaching hospital groups, there was a 3-fold variation (£96 k vs £29 k). There was a 10-fold difference in smaller acute Trusts (£32 k vs £3 k) and specialist trusts (£14 k vs £1.4 k).

Discussion It is important to stress that expenditure does not equate to prescribing or use of these products. Also, this expenditure does not include any products bought in a hospital shop or provided by any on site external stop smoking services. Being unwell and admitted to hospital offers a unique opportunity for sick smokers to stop smoking. Heightened health concerns and being in an environment where smoking is not permitted enhances the motivation to quit. However, it appears that not all secondary care Trusts in London are providing the tools to help sick smokers quit. This may also reflect the lack of skilled advisors to provide support within these trusts. Hopefully, the variation in expenditure will narrow with the introduction of a national CQUIN for offering stop smoking products in secondary care coming into force for 2017–2019.

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An update in pneumonia: from big data to cellular function

S6

ESTABLISHING THE TRUE INCIDENCE OF HOSPITALISED COMMUNITY ACQUIRED PNEUMONIA (CAP) IN THE UK: A HOSPITAL EPISODE STATISTICS (HES) ANALYSIS

¹J Campling, ¹D Jones, ¹G Ellsbury, ¹C Czupek, ¹H Madhava, ²M Slack. ¹Pfizer Ltd, Tadworth, UK; ²Griffith University, Southport QLD, Australia

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Introduction In November 2015, the Joint Committee on Vaccination and Immunisation (JCVI) recommended against including PCV13 for age based and risk based populations.¹ A

principal driver of this recommendation was the incidence of hospitalised pneumococcal pneumonia, reported by Rodrigo *et al.*² Using the Results from the study by Rodrigo *et al* a simple calculation can be performed to approximate the incidence of vaccine preventable pneumococcal CAP from all cause hospitalised CAP (ACH-CAP). The national Hospital Episodes Statistics (HES) database³ reports a significantly higher incidence of ACH-CAP which could impact the potential benefit provided by PCV13.

Aim To compare the incidence of ACH-CAP reported in the study by Rodrigo *et al.*² with the incidence of ACH-CAP coded in HES in the corresponding population, over a similar period of time.

Materials and Methods The study by Rodrigo *et al* ran from September 2008 for 5 years. Inpatients ≥16 years old, with symptoms suggestive of lower respiratory tract, new CXR infiltrates consistent with pneumonia, and treated for CAP, were included.² Our HES analysis included patients ≥18 years old with (ICD-10) codes J12–J18⁴ (April 2008 – March 2013) admitted to the hospitals in Rodrigo's study (Nottingham University Hospitals NHS Trust – City Campus and Queen's Medical Centre Campus).

Results Rodrigo and colleagues identified 2702 adults while our analysis of HES identified 11 059 across both sites.

Conclusion The study by Rodrigo *et al* was not specifically designed to capture total incidence of ACH-CAP, instead its objective was to report on pneumococcal serotype evolution.² Misclassification and misdiagnosis of pneumonia in HES is well-recognised⁵ but doesn't appear to explain the four-fold difference in these numbers. Further investigation to validate HES data against hospital records could be performed. Accurate incidence data would impact cost-effectiveness analyses and facilitate a more informed decision next time the data is reviewed.

Please refer to page A257 for declarations of interest in relation to abstract S6.

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