Spoken sessions

trained in pleural procedures (Group B) in 32 patients. Primary endpoints were success of the pleural procedure, procedural pain using visual analogue score (VAS), patient anxiety using short form State Trait Anxiety Index (STAI). Secondary outcome measures were complications. Non parametric statistical tests were used for analysis.

Results There was no statistically significant (NS) difference between groups as assessed by primary endpoints (Table 1). There was one failure to undertake therapeutic pleural aspiration in Group B. Delayed complications were drain dislodgement in Group A and re-expansion pulmonary oedema in Group B.

Conclusion We believe this is the first randomised control study to test if after appropriate training a Pleural Nurse Practitioner is able to safely and effectively undertake pleural procedures with equivalence in practice to trained doctors.

	Group A (NP)	Group B (Dr)
Pleural procedures	Total 17	Total 15
• Diagnostic pleural aspiration	8	2
• Therapeutic pleural aspiration	4	3
• Chest drain insertion	3	6
• Indwelling Pleural Catheter (IPC) insertion	2	4
Pleural procedure success (%)	100	93.75
Procedural pain median VAS score (range)	2' (0-7)	3' (0-7)
Patient STAI (range)	3.4' (1-4)	3.5' (1-4)

(= NS)

Abstract S81 Figure 1. Graph representing the changes in comfort and neural respiratory drive with increasing trigger delay

S82 MULTI-CENTRE PROSPECTIVE COMPARISON OF THE BTS AND ACCP GUIDELINES TO DETERMINE SIZE IN PRIMARY SPONTANEOUS PNEUMOTHORAX

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Introduction and Objectives Attempts to develop standardised guidelines in the management of primary spontaneous pneumothorax (PSP) have been severely hampered by a lack of high quality clinical research. The American College of Chest Physicians (ACCP) and BTS guidelines are based on non-analytical studies and expert opinion. Remarkably, no consensus regarding the definition of PSP severity exists, with the ACCP and BTS each using different arbitrary measurements: hilar size > 2cm (BTS) versus apical size >3cm (ACCP). The objective of this study is to define the critical size of PSP.

Methods A multi-centre prospective comparison of 168 consecutive patients presenting with PSP was performed in 13 NHS hospitals in the East of England over a period of 15 months. We compared the ability of the BTS and ACCP definitions to predict the eventual need for intercostal chest drain (ICD) insertion. Since current BTS guidelines state that pleural aspiration should be attempted prior to drainage in non-compromised PSP patients, we reasoned that ICD insertion was a valid endpoint. Using a logistic regression model that included hospital, age, hilar size, apical size and the hilar-apical interaction, we generated receiver operating characteristic (ROC) curves reflecting the probability of either measure correctly predicting the eventual need for ICD.

Results One hundred and sixteen of 168 patients for whom data were collected had been treated according to BTS guidelines. Of these, 39 eventually required ICD insertion. The correlation between hilar and apical distances was high (0.7). The logistic regression showed that hilar distance was statistically significant ($p < 0.001$), but apical distance and the interaction were not. The sensitivity and specificity from using BTS guidelines were 0.667 (95% CI 0.510–0.794) and 0.805 (0.703–0.878) respectively, whereas the same values using the ACCP guidelines were 0.948 (0.831–0.986) and 0.351 (0.253–0.462).

Conclusion Guidelines based on hilar distance, such as the BTS's, are likely to be more informative in predicting the eventual need for ICD. However, the two distances are highly correlated. This study, for the first time, provides an evidence-based clinically relevant definition of PSP requiring ICD that will guide treatment and serve as the foundation for subsequent trials.

S83 THE USE OF INDWELLING PLEURAL CATHETERS (IPC) WITH OR WITHOUT CONCURRENT TALC POUDRAGE (TP) AT MEDICAL THORACOSCOPY (MT) FOR CASES OF SUSPECTED TRAPPED LUNG (TL)

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Background Recurrent symptomatic non-infectious pleural effusions can be effectively treated with MT and TP with pleurodesis rates approaching 85% in variety of malignant and benign aetiologies. When TL is likely at MT, management is uncertain.

Aim We report on a single centre experience of inserting an IPC at MT with or without talc poudrage for suspected trapped lung. TL was suspected if any of the following were observed (a) failure of lung to inflate on voluntary coughing at MT, (b) visceral involvement of more than 25%, (c) radiological evidence of endobronchial compromise and (d) hydropneumothorax following previous thoracentesis.

Method A review of all IPC insertions at MT performed at our institution between March 2009 and Feb 2013 assessing indications, length of stay (LoS) after procedure, use of concurrent TP, IPC removal rates and recorded complications. All cases had been performed using rigid thoracoscopy. TP was performed with 4g sterile graded talc. Rocket 16F IPC were used in all cases.

Results All IPCs were inserted during MT for likely or possible TL. N = 36 cases. 14 male. Diagnoses—10 benign recurrent effusions; 26 malignant. See table 1 for details. Median age 73yrs (45–92). Median LoS post procedure—non-elective 7 days (1–23); elective 2.5 days (0–6). 22 (56%) had concurrent TP (18 for malignancy). 14 (36%) had their IPC removed with median time to removal 40 days (28–119) and of these, 11 had received

TP during MT. 20 patients have died during follow up (none procedure-related) of which 11 still had their IPC *in situ*. Complications—2 blocked drains (not talc group, 1 case needing additional thoracocentesis), 2 leaking caps (replaced).

Discussion IPC insertion at MT with or without TP for cases of suspected TL appears to be safe, effective and obviates the need for further pleural intervention at a later date. This potentially has significant benefits to the patient as well as a reduction in overall healthcare costs to the NHS. Using the above criteria predicted TL in 78% of patients. This single centre observation needs to be investigated by a larger multi-centre study in patients with suspected TL at MT.

Abstract S83 Table 1.

Benign diagnosis (No.)	Malignant diagnosis (No.)
Pleuritis (7)	Malignant mesothelioma (4)
Pleural fibrosis (1)	Lung cancer (3)
Benign haemorrhagic (2)	Breast cancer (4)
	GI/renal cancer (5)
	Gynaecological cancer (2)
	Others (8)

Improving long term outcome in chronic respiratory failure

S84 THE EFFECT OF PATIENT VENTILATOR ASYNCHRONY (PVA) ON HEALTH RELATED QUALITY OF LIFE DURING INITIATION OF HOME MECHANICAL VENTILATION (HMV)

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Introduction Poor patient-ventilator interaction has been shown to adversely affect respiratory muscle unloading, sleep quality, gas exchange and patient comfort whilst on ventilation. We hypothesised that nocturnal PVA during the first 3 months HMV initiation would have an adverse effect on patient health related quality of life.

Methods Recording neural respiratory drive, as assessed by the parasternal intercostal electromyogram, respiratory inductance plethysmography and mask pressure waveform we performed a comprehensive assessment of PVA overnight both on initiation of HMV and at 3 months. Asynchrony levels were recorded as a percentage of the total of number of breaths that were both requested and received by the patient overnight. The severe respiratory insufficiency questionnaire (SRI) was completed by patients at both of these hospital visits. Daytime arterial partial pressure of carbon dioxide (P_aCO₂) was also assessed.

Results 16 patients (8 male) admitted for initiation of HMV were recruited. 7 with neuromuscular or chest wall disease, 6 with chronic obstructive pulmonary disease and 3 with obesity related respiratory failure. Adherence to ventilation at 3 months was 6h 38m (1h35m-7h32m). There was an overall improvement in SRI scores of 9.5 (-0.7 to 18.2) points with the largest improvement observed in the anxiety component with an increase of 20 (5.6–35) points followed by the sleep component

of 12.5 (3.6–28.6) points over the 3 months. A significant inverse correlation was observed with the change in asynchrony levels and the change in SRI scores over the 3 month assessment period ($r_s = -0.70$; $p = 0.02$; Figure 1). No significant correlation was observed between the change in P_aCO₂ and change in SRI score.

Conclusion Enhancing patient-ventilator interaction, in particular reducing patient-ventilator asynchrony, had a direct correlation with improving health related quality of life of patients receiving HMV. Importantly, the anxiety and sleep components of the SRI were the most improved over the 3 months of treatment indicating the enhancement in perceived sleep quality with the psychological benefit of HMV treatment.

Abstract S90 Figure 1. Change in PVA levels against change in SRI total scores during 3 months of HMV.

S85 INITIATION OF LONG-TERM NON-INVASIVE VENTILATION ENABLES SUCCESSFUL WEANING FROM PROLONGED MECHANICAL VENTILATION

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Introduction Prolonged mechanical ventilation is an increasing workload for intensive care units (ICU). Units distinct from ICU can provide step-down care for stable slow-to-wean patients and facilitate weaning by the use of long-term non-invasive ventilation (NIV). Development has been limited in the UK despite being recommended by the NHS Modernisation Agency in 2002 and reiterated by the NHS Commissioning Board in 2013. A unit opened at our hospital in September 2010 as part of a comprehensive complex home ventilation service.

Methods Review of completed in-patient episodes of transfers for weaning from invasive mechanical ventilation (IMV) from September 2010 to December 2012. Transfers following neurosurgery were compared with allcomers.

Results Thirty-nine patients were identified, mean age 54.2 (17.9) years, 24 male. Average length of stay (LOS) on the referring ICU was 49 days. Six had neuromuscular disease, nine COPD, 7 were obese or had chest wall disease, 14 ICU-acquired weakness and 3 used NIV prior to ICU admission. Thirty-five patients survived to hospital discharge.