patient records (ED and inpatient) were keyword searched for "pneumothorax" and x-rays were interrogated. We used HRG code DZ26B ("Pneumothorax without complications"), with a tariff of £1840.83 per episode to calculate cost implications. Measure of agreement of PSP size was assessed with Cohen's κ.

Results 43 confirmed pneumothorax cases were identified, 37 PSP. Of those with PSP: mean (SD) age was 28 (6.9) years, 31 (84%) were male, 23 (62%) were right sided. See Abstract P35 table 1 for assessment of PSP size. 21 (56.8%) had NA, successfully in 8 (38%). 17 (46%) patients had an ICD placed; 12 (70.6%) with <14F drains. Median length of stay following ICD was 5 (IQR 2–12) days. 28 (75.6%) had appropriate adherence to BTS guidelines (4 (10.8%) were not aspirated, 5 (13.5%) had a large, rather than small, ICD). 14 (37.8%) patients were sent for thoracoscopic surgery (on site), 4 (9.2%) PSP not resolving, 10 due to ipsi-, or contralateral, reoccurrence of PSP. If Nationally 10% of patients do not have NA as first line treatment, then (assuming a 40% success rate), this may be costing the NHS in England up to £438 412 a year in preventable admissions. Adherence to ACCP guidance would cost the NHS in England an extra £3.9 million in additional ICDs and hospital admissions.

Abstract P35 Table 1 Assessment, and agreement, of PSP size

Guideline	Measurement	Large n=(%)	κ
BTS	Interpleural space >2 cm at level of hilum	15 (40.5)	
ACCP	Interpleural space >3 cm from apex	30 (81.1)	0.275

ACCP, American College of Chest Physicians; BTS, British Thoracic Society.

Conclusions ACCP and BTS guidance on PSP size have only poor-fair agreement. Local practice to increase NA rates and use of small drains should be adopted. Adherence to appropriate National guidelines has large healthcare economic implications.

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P36 RESPIRATORY FUNCTIONAL STATUS AFTER INTRAPLEURAL T-PA ADMINISTRATION FOR COMPLICATED PARAPNEUMONIC EFFUSIONS

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Introduction and Objectives In a large-scale, multicentered randomised trial, intrapleural administration of streptokinase has been proved unsuccessful among patients with pleural infection but >80% of them had visibly purulent pleural fluid while small bore chest tubes (median diameter: 12F) had been used. The aim of our study was to investigate lung function and exercise capacity after intrapleural administration of recombinant tissue plasminogen activator (t-PA) in adult patients with complicated parapneumonic pleural effusion (CPE).

Methods Fifteen consecutive patients (mean age 50.2±19.3 years) with CPE were included. Chest tube (13 patients: 32F, 2 patients: 10F) was inserted under guidance of computed tomography and all patients received IV antibiotics. After pleural fluid drainage has been stopped for 24 h, 25 mg t-PA/day was administered via chest tube for two consecutive days. We evaluated patients with spirometry before t-PA, 1 day after chest tube removal and 1 month after discharge. During the second and third time-point evaluations, 6 min walking test was also performed.

Results Patients reported symptoms 10.7±7.4 days before hospital admission while all of them demonstrated loculated effusions on computed tomography. The mean production of fluid was 721.3±821.7 ml before and 1.500±107.1 ml after t-PA administration ($p<0.001$). Improvement in lung function and exercise capacity during follow-up are presented on Abstract P36 table 1. FVC had been increased by 572.6±653.5 ml initially and by 575.8±366.6 ml 1 month later. VATS was necessary only for one patient. Adverse events were pain (7/15) and minor bleeding (2/15) at the site of chest tube insertion.

Abstract P36 Table 1 Pleural fluid characteristics, lung function and exercise capacity during follow-up

pH	7.22±0.15
Cells (mm^3)	1777±1447
Neutrophils (%)	65.5±12.6
LDH	3120±6097
FVC before t-PA (L)	2.4±0.73 (51.6±14.8% pred)
FEV_1 before t-PA (L)	2±0.6 (52.8±16.1% pred)
FVC after tube removal (L)	2.8±0.8 (63.4±13.4% pred)
FEV_1 after tube removal (L)	2.3±0.8 (64.3±17.4% pred)
6 MWT after tube removal (m)	528±116
FVC one month after discharge (L)	3.7±0.8 (83.5±12.2% pred)
FEV_1 one month after discharge (L)	3±0.8 (85.7±17.1% pred)
6 MWT one month after discharge (m)	573.2±83

Conclusion Intrapleural administration of t-PA for CPE was an effective treatment considering functional status of the respiratory system during follow-up.

COPD: a systemic disease or a co-morbid condition?

P37 MUSCLE MASS IN COPD PATIENTS RECEIVING ANGIOTENSIN II RECEPTOR BLOCKERS AND ACE-INHIBITORS

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Background Skeletal muscle dysfunction is well recognised in chronic obstructive pulmonary disease (COPD) and is associated with increased morbidity and mortality. Considerable circumstantial evidence supports a role for renin-angiotensin systems in skeletal muscle turnover. Angiotensin II (ATII) administration causes cachexia through several biological mechanisms. Angiotensin converting enzyme inhibitors (ACE-I) block the conversion of angiotensin I to ATII. Previous pilot studies have shown that the administration of ATII receptor blockers (ARB) or ACE-I to COPD patients may increase quadriceps strength and peak work rate (Andreas *et al*, 2006; Di Marco *et al*, 2010). We hypothesised that in an unselected COPD population referred for pulmonary rehabilitation (PR), those receiving ARB or ACE-I drugs would have preserved muscle mass.

Methods Data from 373 consecutive COPD patients (213M: 160F; mean age 68.3; median FEV_1 41% predicted) referred to an outpatient pulmonary rehabilitation programme were analysed. Patients were divided into those receiving either an ARB or ACE-I and controls (those receiving neither drug). Fat free mass (FFM; measured by bioelectric impedance analysis), incremental shuttle walk