Hypothesis Greater physician involvement with a prospective coding cross-checking system would improve coding outcome for EBUS-TBNA and financial disparity.

Methods From November 2010 to June 2011, 52 consecutive patients underwent EBUS-TBNA in a UK teaching hospital. After every procedure, anonymised patient details were emailed securely to the Trust Coding Lead. Every month, the Trust Informatics Lead would email the final coding outcomes and tariffs for all the EBUS-TBNA patients. These were cross-checked against a prospective anonymised procedure database. Primary outcome was coding accuracy. Data were compared to a previous EBUS-TBNA coding study[2] as a control (no coding intervention) using contingency table analysis with Fishers Exact Test and a p value of <0.05 was deemed significant (GraphPad Prism 5 software). Differences in financial loss were calculated using a tariff of £504 for conventional bronchoscopy and £3404 for EBUS-TBNA (E63.2+T87.4).

Results All 52 patients were coded correctly with no financial loss. From the previous study of 52 patients, 8 (14.4%) were coded incorrectly which was significant (OR 20.1, 1.1−357.5, p=0.006, Fishers Exact). Financial loss to the NHS Trust was calculated as £23 200, projected to £40 000 per year.

Conclusion Greater physician engagement with coders improves coding outcomes. This is of particular importance in interventional specialties where the potential for financial loss is of a higher magnitude. A simple prospective cross-checking system can achieve better outcomes with no extra cost and minimal effort.

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P188 IMPACT OF WARD BASED CHEST ULTRASOUND ON THE RADIOLOGY DEPARTMENT

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Introduction The ability for chest physicians to perform chest ultrasound is on the increase since the NPSA report concerning chest drain insertion and the BTS Pleural guidelines 2010. Our respiratory department received a portable ultrasound device (Sonosite 180 Plus) in April 2010 and by August 2010 we had 3 physicians who have achieved level 1 thoracic ultrasound skill (1 Chest Consultant, 2 Specialist Registrars—1 Respiratory, 1 Acute Medicine). We were keen to see what kind impact this has made on the chest ultrasound requests on the radiology department.

Methods Data collected comparing 2 periods. Dataset 1: Nov 2009—Jan 2010 and Dataset 2: Nov 2010—Jan 2011. Information was gathered via the Webpacs system (GE Medical System: Centricity® Enterprise Web) and the CRIS—Clinical Radiology Information System (Healthcare software system). Only adult (=16 years) inpatient request were included.

Results

Dataset 1: Nov 2009—Jan 2010	Dataset 2: Nov 2010—Jan 2011
n=81	n=45
55 (68%) scan done on same day of receiving request	32 (71%) scan done on same day of receiving requests
All scans done within 6 days	All scans done within 3 days
Imaged saved 62 (77%)	Images saved 35 (78%)

Summary Having physicians with skills to perform chest ultrasound by the bedside has reduced the burden on the radiology department and the response times to the scan all the patients has halved from 6 to 3 days. We hope this service can be further improved with more physicians attaining this skill.

P189 EVALUATION OF THE ROLE OF CARDIO-PULMONARY EXERCISE TESTING IN THE DIAGNOSIS OF UNEXPLAINED BREATHLESSNESS

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Introduction and Objectives Cardio-Pulmonary Exercise Testing (CPET) provides a non-invasive measurement of cardiac and pulmonary function. CPET offers a unique assessment tool for the investigation of patients with unexplained dyspnoea (UD). These individuals often undergo exhaustive, expensive and invasive assessment without definitive diagnosis. CPET can provide valuable diagnostic information and helps to focus further assessment of the dyspnoeic patient. The aim of this retrospective cohort study was to evaluate the outcome of CPET in patients with UD and to determine how clinically useful the test is at influencing further management.

Methods CPET data were collected between February 2008 and February 2011 for patients with UD and analysed retrospectively. Data included demographics, pre-CPET investigation results, the CPET report and post-CPET clinic letters. This information was accessed via hospital reporting systems as well as a local CPET database and patient notes.

Results Patient demographics and pre-CPET investigation data are shown in Abstract P189 table 1. Patients were assigned diagnoses based on test reports. A total of 96 (64%) patient letters were obtained to

Abstract P189 Table 1 Table demonstrating —A: Patient demographics, B: Investigation performed in 6 months prior to CPET (unless stated), C: Post CPET diagnosis

Pre-test		Post-test	
A		**C**	
Demographics	**Mean (range)**	**Diagnosis**	**No. with specific diagnoses (%)**
BMI	27.7 kg/m^2 (17.6—43.8)	Normal	41 (27)
Age	53.5 yrs (17—80)	Deconditioning	26 (17)
Sex distribution	Female 70% Male 30%	Pulmonary vascular disease	24 (16)
B		Dysfunctional breathing	23 (15)
		Cardiac pump failure	18 (12)
Investigation	**% Performed**	Chronotropic Insufficiency	11 (7)
Lung function	91	Heart Failure	10 (7)
Any blood test (6 months)	67	None	10 (7)
Chest radiograph	67	Ischaemic heart disease	9 (6)
Echocardioram	45	Myopathy	9 (6)
CT scan	27	Drugs	7 (5)
V/Q scan	23	Raised BMI	7 (5)
Coronary angiogram	15	Obstructive lung disease	5 (3)
Cardiac treadmill test	7	Restrictive lung disease	5 (3)
6-min walk test	4	Cardiomyopathy	1 (1)
Cardiac MRI	3	Metabolic causes	1 (1)
Pleural biopsy	1	Rhythm abnormality	1 (1)

determine whether the test had affected the diagnostic outcome directly, indirectly or not at all. 78 (81%) of the tests resulted in direct outcomes, 12 (13%) resulted in indirect outcomes and 6 (6%) had no impact on further investigation or diagnosis. A significant proportion (27%) of patients undergoing CPET for UD responded normally to exercise and were discharged with reassurance. 15% were diagnosed with dysfunctional breathing and referred to a specialist physiotherapist for breathing retraining. 57 (38%) patients were diagnosed as having an exclusively normal or dysfunctional breathing response to exercise. Of these, many had undergone investigation prior to CPET including 19 ECG, 14 V/Q scans, nine CT scans, six coronary angiograms, four cardiac treadmill tests, two nuclear medicine stress tests and one cardiac MRI.

Conclusions By introducing CPET at an earlier stage in the diagnostic algorithm for UD, many invasive and expensive investigations could have been avoided. CPET resulted in direct outcomes for 81% of the patients, highlighting the diagnostic importance of CPET in the investigation of UD.

P190 | **LONG-TERM OUTCOME OF BRONCHIAL ARTERY EMBOLISATION (BAE) FOR MASSIVE HAEMOPTYSIS**

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Background BAE for massive haemoptysis is potentially life-saving with low short-to-medium term failure rates in previous studies. We aimed to characterise patients referred for BAE, to examine long-term treatment success and identify risk factors for requiring repeat BAE.
Methods We retrospectively identified all patients undergoing BAE from 1994 to 2007. We collated data from hospital databases and primary care on demographics, respiratory diagnoses and procedure with follow-up of up to 16 years. Outcomes were all-cause mortality and recurrence of haemoptysis requiring repeat BAE.
Results 158 patients were embolised on 208 occasions. 85 (54%) patients were male and median age was 54 (IQR: 41–67) y. The most common underlying diagnoses were aspergilloma (n=38; 24% of patients), bronchiectasis (n=24; 15%), unidentified cause (n=17; 11%) chronic tuberculosis (n=14; 9%), active tuberculosis (n=12; 8%) and cystic fibrosis (n=11; 7%). All-cause mortality at 1 month and 3 years was 5.3% and 29.7%, and need for repeat BAE was 4.7% and 30.7% respectively. Repeat BAE at 3 years was most common with aspergilloma (50%) and least common with active TB (0%). 3-year mortality was highest in cystic fibrosis (40%) and least with unknown cause (7.7%) Neither number nor location of vessels embolised predicted mortality or need for repeat BAE. No major procedural complications were noted.
Conclusions BAE by experienced operators is a safe, minimally invasive procedure for massive haemoptysis with excellent short-term success. It does not prevent late recurrence of haemoptysis nor obviate the need for repeat BAE, the risk of which is related to the underlying disease rather than to technical aspects of the procedure.

Lung cancer: clinical studies

P191 | **A META-ANALYSIS OF ADJUSTED AND UNADJUSTED OBSERVATIONAL STUDIES OF SLEEVE LOBECTOMY VS PNEUMONECTOMY FOR NON-SMALL CELL LUNG CANCER**

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Introduction and Objectives A previous (published in 2007) meta-analysis of unadjusted results from observational studies suggested that sleeve lobectomy offered better long-term survival than did pneumonectomy for non-small cell lung cancer (NSCLC). Since the

meta-analysis was conducted, a number of studies, which included ones providing adjusted mortality data, have been published to date. We performed an updated meta-analysis of sleeve lobectomy vs pneumonectomy for long-term mortality in NSCLC, combining separately adjusted and unadjusted results.
Methods The MEDLINE and EMBASE databases and the Cochrane Library and Central Register of Controlled Trials were searched using PubMed and OVID. Studies considered for inclusion met the following criteria: the design was a study comparing sleeve lobectomy vs pneumonectomy; the study population was patients with NSCLC; and main outcomes included long-term all-cause mortality. From each individual study, hazard ratios (HRs) for mortality and 95% CIs were abstracted. Study-specific estimates were combined using inverse variance-weighted averages of logarithmic HRs.
Results Our search identified no randomised trials and 14 observational comparative studies that included 7 ones providing adjusted mortality data. Adjustment methods included matching (with propensity score or tumour location and invasion) and multivariate Cox proportional hazard regression. Separately pooled analysis of seven adjusted (1013 patients) and seven unadjusted studies (2278 patients) demonstrated respectively a statistically significant lower all-cause mortality by 36% and 33% associated with sleeve lobectomy relative to pneumonectomy in fixed effects models (adjusted HR, 0.64; 95% CI 0.53 to 0.77; p<0.00001; unadjusted HR, 0.67; 95% CI 0.58 to 0.77; p<0.00001; Abstract P191 figure 1). There was minimal study heterogeneity and accordingly little difference in the pooled result from random-effects modelling. When data from all the 14 studies (3291 patients) were pooled using a fixed-effects model, sleeve lobectomy was associated with lower all-cause mortality by 34% relative to pneumonectomy that remained statistically significant (HR, 0.66; 95% CI 0.59 to 0.74; p<0.00001).
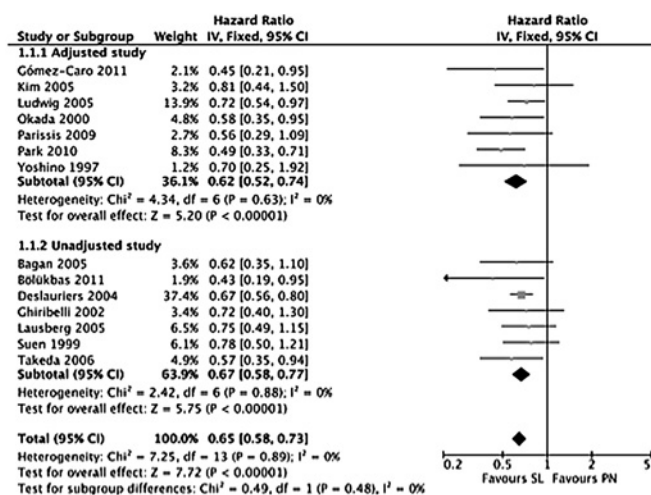
Abstract P191 Figure 1 Long term all-cause mortality patients with non-small cell lung cancer assigned to sleeve lobectomy (SL) vs pneumonectomy (PN).

Conclusions Sleeve lobectomy is likely to have a benefit for long-term all-cause mortality over pneumonectomy in NSCLC. Sleeve lobectomy rather than pneumonectomy should be considered for anatomically suited NSCLC.

P192 | **SHORT-TERM OUTCOME OF ATTEMPTED CURATIVE RESECTION FOR LUNG CANCER IN ELDERLY PATIENTS**

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Background Although resection offers the best chance of cure for most solid tumours, including the lung, <2% of elderly patients