Conclusions Between 2003 and 2008, 27% of patients at our cardiothoracic centre for lung cancer underwent a futile thoracotomy. High SUVmax, the presence of lymphovascular invasion and tumour size ≥3 cm are predictors of FT. Future, prospective studies employing adjuvant chemotherapy in these patient groups are warranted.

Organisation of respiratory care

P223 ONE BLOOD GAS IS NOT ENOUGH TO ASSESS A PATIENT FOR LTOT—HOW TO KISS GOODBYE TO CIRCA £10 MILLION IN ENGLAND

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It is recommended in the recent NICE Clinical Guidelines on COPD (June 2010) that stable patients should be offered LTOT if the PaO_2 <7.3 kPa or >7.3 and <8 kPa with associated features; assessment should be made by measuring arterial blood gases on two occasions at least 3 weeks apart in confirmed stable COPD with optimum management. This was the criteria for entry in the MRC and NOTT LTOT trials. This is currently our practice. It has also been recently suggested as part of the COPD National Strategy that only one measurement of blood gases may be necessary. The annual spend on tariffs including LTOT in England in 2006 was £35 500 000. 38 patients were started on LTOT by the South East Essex Oxygen Service in 1 year from March 2009. In addition 11 stable COPD patients had a blood gas measurement in respiratory outpatients and had a PaO_2 <7.3 kPa (Mean 6.79 SD 0.4) and when repeated by the oxygen team was above 7.3 kPa. These patients therefore did not meet the criteria for LTOT. One patient subsequently did meet the criteria within the year. This suggests that at least an extra 28% of patients would have been prescribed LTOT if only one initial blood gas below 7.3 kPa was used to assess for eligibility for LTOT. This could produce an extra spend of approximately £10 million on LTOT if extrapolated across the whole of England. These results suggest that there is considerable variability in PaO_2 in hypoxic patients over time. These results also support the current NICE Clinical Guideline which recommends two measurements of arterial blood gases at least 3 weeks apart should be made before prescribing oxygen. This was the evidence base for starting LTOT in randomised controlled trials.

P224 SCREENING OF CORONARY CARE INPATIENTS WITH SPIROMETRY TO DETECT EARLY OBSTRUCTIVE AIRWAYS DEFECTS

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Introduction and objectives COPD is the most common chronic lung disease in the developed world yet many patients do not present until they have advanced disease. Screening to identify those with early obstructive airways defects with spirometry may enable earlier treatment and enrolment in smoking cessation programs. Widespread spirometric screening for COPD in the general population is unlikely to be cost-effective. Cardiology inpatients often share similar risk factors to those with COPD; smoking in particular. We hypothesised that screening patients admitted to our coronary care unit would be an effective way of identifying patients at increased risk of developing COPD by using spirometry to detect early obstructive airways defects.

Methods Patients admitted to a coronary care unit at a district general hospital were selected for spirometric assessment. Medically unstable individuals, deemed as those with a modified early warning (MEWS) score of 2 or more were excluded. Forced volume capacity (FVC) and Forced expiratory volume in one second (FEV_1) were calculated using a Vitalograph alpha spirometer. The GOLD (Global initiative for Chronic Obstructive Lung Disease) criteria were used to categorise patients according to COPD severity. Those who were found to have airway obstruction were offered repeat testing following discharge.

Results 20 patients were in the initial study population. Four patients were excluded—three because of poor technique and one who had pre-existing COPD. No other patients had any formal diagnosis of respiratory disease. Of the 16 patients, 10 (62.5%) had objective airways obstruction; 6 (37.5%) patients had GOLD stage I, 3 (18.8%) patients GOLD stage II and 1 (6.3%) patient had GOLD stage 3 disease. Of these 10 patients, seven were smokers or ex-smokers. Amongst patients with known ischaemic heart disease, 69.2% had a degree of airways obstruction, whilst 77.8% of patients with a history of smoking had an obstructive picture on spirometry.

Conclusion Coronary care unit inpatients represent an effective target population to screen for potential obstructive airways disease. Identifying patients with ischaemic heart disease and/or a smoking history will allow patients to be risk-stratified further and increase the sensitivity of spirometry. Our study compares favourably with other methods of identifying high risk groups for screening.

Abstract P224 Table 1 A table to show various proportion of patients found to have airway obstruction on spirometry

GOLD stage	All patients (n=16)	Patients with IHD (n=13)	Current & ex smokers (n=9)
Normal	6	4	2
1	6	5	4
2	3	3	2
3	1	1	1
Percentage of patients with obstrctive disease	62.5%	69.2%	77.8%
Percentage of patients with normal spirometry	37.5%	30.8%	22.2%

P225 FIRST NATIONAL SURVEY OF THE RESPIRATORY PHYSIOTHERAPY WORKFORCE

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In 2008, the RCP/BTS COPD Audit reviewed the multidisciplinary workforce provided by acute Trusts in managing the care of patients with COPD: the results showed that nationally, the median number of respiratory specialist physiotherapists employed in each hospital was 1 (Abstract P225 Table 1), highlighting that the understanding of the number and speciality level of this workforce is poorly recognised by other professionals. In conjunction with the BTS, and to complement the recently published BTS/ACPRC Physiotherapy Guidelines on the Spontaneously Breathing Adult Medical Patient (2009), a survey of the respiratory physiotherapy workforce was carried out in October 2009. An electronic

questionnaire was sent to all ACPRC members and circulated to members of the Chartered Society of Physiotherapy, with a request for a response from each institution, providing information on the number of respiratory physiotherapists, their grading and the estimated percentages of various diagnostic respiratory cases seen on a daily basis. 149 responses were received: 70% (n=105) from acute trusts, 24% (n=36) from primary care organisations. 73% (n=110) of respiratory physiotherapists were employed by physiotherapy departments: 59% (n=89) as dedicated medical respiratory physiotherapy teams, the rest providing cross speciality respiratory physiotherapy cover. The results highlight the model of staffing most often seen in respiratory physiotherapy, with the team consisting of a range of staffing grades but no standard team structure nationally. The level of physiotherapy clinician leading the team varied from Band 7 to a Consultant Respiratory Physiotherapist (8A – 8D): the average was less than 1 at Band 8 nationally. 54% (n=81) of responders were ACPRC members, 19% (n=28) both ACPRC and BTS members. The survey identified that largely the respiratory physiotherapy workforce is not embedded within respiratory medicine departments which means that appreciation of multidisciplinary team membership is of even greater importance. Despite the survey identifying a higher number of respiratory physiotherapists compared to earlier audit results, it also highlighted a workforce capacity shortfall, leaving some respiratory patients untreated on a daily basis. In addition, there is a need to encourage membership of special interest groups such as the ACPRC and BTS to promote exchange and dissemination of good practice.

Abstract P225 Table 1 Comparison of numbers of respiratory specialist physiotherapists nationally, identified by two audits

Profession	RCP/BTS Audit 2008 National (Median no WTE)	ACPRC/BTS Physiotherapy (PT) Survey 2009 (Mean WTE)	
		Medical respiratory PT team	Cross speciality respiratory PT team
Respiratory Specialist Physiotherapist	1 (0.5–2)	3 qualified 0.76 assistant	6.83 qualified 1.62 assistant

P226 PREVALENCE AND TREATMENT OF PAIN IN HOSPITAL IN-PATIENTS WITH RESPIRATORY DISEASE

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Introduction and objectives Pain is common, with 43% of medical inpatients experiencing moderate to severe pain [Dix *et al BJA* 2004;92(2):235–237]. Factors contributing to inadequate pain relief include concerns about analgesic side effects, drug interactions and impact of treatment on co-morbidities. In respiratory in-patients we audited prevalence and severity of pain, adequacy of pain relief and contraindications to escalation of analgesia.

Methods Unselected adult inpatients (≥16 years) with respiratory disease managed on a respiratory specialist ward were included in the audit. Patients with lung cancer or chest drains were excluded. Diagnoses, investigation results and medications were collected from patient records and patients underwent pain assessment (Brief Pain Inventory). Analgesia was defined as inadequate if patients reported an average pain score or pain interference score (pain interfering with daily activities) >3/10 during the previous 24 h. For patients with inadequate analgesia, cautions and contraindications to analgesics and non-steroidal anti-inflammatory drugs (NSAIDs) were determined to establish whether analgesia could be escalated.

Results Of 101 patients interviewed, main respiratory diagnoses were: COPD (40%), pneumonia/LRTI (38%), asthma (13%) and other (10%). 52 patients reported any pain in the last 24 h, of which the sites of worst pain were chest (44%), back (25%), limb (19%) and other (12%). Of these patients, 85% (n=44) were assessed as having inadequate analgesia. Abstract P226 Table 1 groups those patients with inadequate analgesia by position on the WHO analgesic ladder and details the proportion of patients who have no contraindication to stepping up the ladder. Abstract P226 Table 1 also highlights the proportion of patients who may benefit from adjuvant NSAID therapy. Of those patients with inadequate analgesia, 82% (n=36) had no contraindication to escalation of analgesia and 32% (n=14) had no contraindication to treatment with NSAIDs.

Abstract P226 Table 1 Analgesic options for 44 patients with inadequate pain relief

	No analgesia	Paracetamol	Mild/moderate opioids	Strong opioids	
Step-up contraindicated	0	3	0	5	18%
Step-up possible	12	14	10	0	82%
NSAID contraindicated	11	12	5	2	68%
NSAID possible	1	5	5	3	32%
Total	12	17	10	5	

Conclusions Pain is common in hospital in-patients with respiratory disease. 44% of respiratory in-patients did not receive adequate analgesia. 82% of these had no contraindication to stepping up the pain ladder and 32% could have had an NSAID added to their treatment. Respiratory patients may benefit from closer assessment of their pain and options regarding prescribed analgesia.

P227 DISPARITIES IN CARE OF ADULT CF PATIENTS IN THE UK

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Background Studies in the late '80s and early '90s suggested that survival in UK CF patients was better in those from non-manual social classes and that adults attending specialist clinics (66% of the total) received more intensive care. Twenty years on, we assessed whether treatments and outcomes varied by specialist care and the socio-economic status (SES) of patients.

Methods The CF Trust provided 2008 annual review data for patients attending UK adult clinics (n=3182). Three models of care were identified: "centre", "shared" between specialist and non-specialist clinics and non-specialist "stand-alone". SES was estimated by Townsend scores at CAS ward level. Distance to clinic was calculated as the distance between the patients' home postcode and that of their clinic.

Results In 2008 most patients received "centre care" (94%) and few received "stand-alone care" (4%). There were no differences in rates of dornase alfa, pancreatic enzyme or IV antibiotic treatment between models. The highest rates of chronic *Pseudomonas aeruginosa* (PA) infections were in patients attending "centre care" ("centre" 62%: "shared" 56%: "stand-alone" 49%; p=0.01) but there were no differences in FEV_1%predicted. Most patients (91%) lived <50 miles of their clinic; the distribution of clinics broadly reflected that of patients. Although those living near their clinic were less likely to be using dornase alfa (<50 miles 43%: ≥50 miles 52%, p=0.003), there were no differences in chronic Pa infection or FEV_1% predicted. There were more patients than expected in the least deprived