+3) y post-diagnosis, showed wide variation in spirometric volumes, flows and gas transfer measurements (See table). 1 patient had obstructive, 2 restrictive, 3 mixed patterns, 1 isolated reduction in gas transfer and 2 were normal.

18/21 MSLCH had smoked; mean 12 pack-y. 10 continued smoking after diagnosis. Initial lung function (n=14) at mean 2 (0–12) y post-diagnosis showed slightly less impairment than PLCH but again wide variation.

In PLCH (n=7) at mean follow up of 7 (2–10) y, mean changes in lung function were minor but there was variation; 2 patients deteriorated significantly. 4/9 patients received treatment. To date, 1 has died, 5 are in remission and 3 have active disease.

In MSLCH (n=12) at mean follow up of 7 (1–16) y, mean changes in lung function were minor apart from 2 patients who showed major reductions. 17/21 patients received treatment. To date 3 have died, 12 are in remission and 6 have active disease.

Pulmonary involvement in LCH and impairment of lung function are common in both single and multisystem disease. Changes in lung function over time are very variable with some patients showing marked deterioration and others minor improvement. Lung function determination is important in monitoring all LCH patients with lung involvement.

Abstract P114 Table 1 Pulmonary function values for PLCH and MSLCH

		PLCH	MSLCH
Initial PFT Mean (range) % predicted	FEV1	72 (34–113)	81 (66–105)
	VC	78 (53–114)	86 (66–104)
	TLCO	62 (19–103)	69 (36–108)
At follow up Mean (range) % predicted	FEV1	69 (30–103)	76 (49–101)
	VC	82 (51–109)	87 (70–97)
	TLCO	59 (22–106)	73 (34–105)
Change Mean (range) % change	FEV1	–5 (–17±8)	–8 (–39±12)
	VC	2 (14 ±4)	–2 (19±14)
	TLCO	–9 (–25±0)	1 (–2±45)

P115 INDUCTION IMMUNOSUPPRESSION (IS) WITH ANTITHYMOCYTE GLOBULIN (ATG) FOLLOWED BY MYCOPHENOLIC ACID (MPA) SIGNIFICANTLY REDUCES RISK OF ACUTE CELLULAR REJECTION (ACR) BUT MAY INCREASE THE RISK OF POST-TRANSPLANT LYMPHOPROLIFERATIVE DISEASE (PTLD) POST LUNG TRANSPLANTATION (LTX)

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Introduction The ideal IS post LTx is unknown and the balance between graft protection against alloimmune injury *vs* the risks of infection and malignancy is a delicate one. Our unit adopted induction immunosuppression with ATG followed by cyclosporin (CyA), MPA and prednisolone maintenance in 2000 with good outcomes. However, a high burden of leucopenia and concern over increasing numbers of PTLD lead to protocol change in August 2010 where *de nevo* azathioprine (AZA) replaced MPA. We now compare short term outcomes of the two strategies.

Methods Two cohorts were compared: cohort 1 (January 2000-July 2010) vs cohort 2 (August 2010-July 2012). ATG 2mg/kg was adminstered on 3 consecutive post operative days. CyA dosing was guided by trough (C0) and peak (C2) levels. Patients were established on MPA 2–3mg daily in divided doses in the first year and AZA titrated to a maximum of 2mg/kg daily as tolerated. We documented the incidence of biopsy proven PTLD and ACR grade ≥A2, correcting for confounders. T-tests, Chi squared, multivariate regression and Kaplan Meier statistics were applied.

Results 181 vs 52 underwent LTx in the 2 study periods. There were no differernces in age (mean 48yrs [11] *vs* 49 [13]; gender (M:F 110:71 *vs* 31:21), type of surgery (Double:Single lung 110:71 *vs* 34:18). Donor age, cause of death and ischaemia time were similar in the 2 cohorts. 169/181 and 3/52 received MPA *vs* 12/181 and 49/52 had AZA respectively. CyA dosing and serum levels did not differ between the 2 cohorts. 29 (16%) and 18 (34%) experienced ACR respectively (P<0.05). 15 patients in cohort 1 developed PTLD (mean age 54 [range 26–63], mean interval from surgery at diagnosis 286 days [73–790], 11/15 developed PTLD in the first post-op year) vs none in cohort 2. Donor:recipient EBV serostatus was similar in the 2 cohorts. Bacterial and fungal infections were documented in 94 *vs* 25 and 41 *vs* 7 respectively. Pseudomonas was isolated from a similar percentage in the 2 groups (59 vs 17). CMV viraemia necessitating pre-emptive therapy with valganciclovir was observed in 56 (32%) vs 10 (19%), P<0.05 despite similar distribution of donor:recipient CMV serostatus.

Conclusion ATG/MPA combination may better protect lung allografts against acute rejection but at the expense of a higher burden of lymphoma and infection. Valganciclovir enhances MPA bioavailability and the high prevalence of CMV activation after ATG/MPA may be a contibutor to our observations. Longer term data, including other malignancies, would further inform this debate.

P116 OUTCOMES OF DCD LUNG OFFERS: A SINGLE CENTRE EXPERIENCE IN THE UK

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Introduction Lung transplantation is the treatment of choice for a variety of end stage lung diseases. It offers prognostic benefit and an improvement in quality of life for carefully selected patients. There sadly remains a critical shortage of lung donors. One way to increase the donor pool, and potentially the number of lung transplants, is to utilise organs which are Donated following Circulatory Death (DCD). Here we review our experience with DCD offers received during a two-and-a-half year period.

Methods This is a retrospective study using data collected prospectively from all lung offers received between 01/2009 – 09/2011. We look at the proportion of DCD lung offers and track the fate of each of these down to transplantation. We look at the documented reasons for declining all DCD lung offers, the rate of DCD lung transplantation and the survival rate in this cohort.

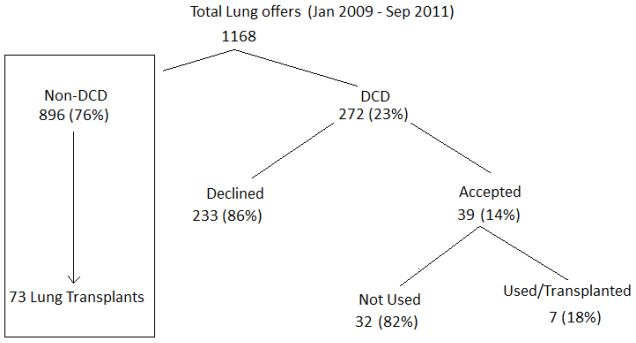
Results Overall, 80 lung transplants were performed during the study period. 7 were performed using DCDs, therefore, 9% of lung transplants are from DCD donors. Survival rate at 1 year post-DCD lung transplantation is approximately 80%.

233(86%) of DCD lung offers were initially declined. Numerous reasons were documented; the most common reason given (122 donors) was due to evidence of infection. In 37 cases, the donor was unlikely to meet extubation criteria. Interestingly, 42 donors were declined as a result of having no suitable recipient on the transplant waiting list alone.

A large proportion of offers were initially accepted but not used. In 5 cases consent for transplantation was withdrawn from family, 7 cases were declined due to time/logistical factors and 10 donors were declined on inspection from the retrieval team.

Conclusion Despite offering good short term outcomes, a large number of DCD lungs are declined for a variety reasons. Donors declined due to having no suitable recipient could be reduced by increasing the number of patients on the waiting list. Increased public awareness and better communication leading up to donation

may lead to fewer cases of consent being withdrawn from family. A lower threshold for attending donors who might not meet criteria may also yield more organs.



Abstract P116 Figure 1 Flow diagram of all lung offers and outcomes

Pleural disease

P117 AMBULATORY AND INPATIENT PLEURAL SERVICE – THE WAY FORWARD

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Between January 2005 and March 2008, 12 deaths and 15 cases of severe harm relating to chest drain insertion were reported leading to NSPA alert. Live ultrasound-guidance for pleural interventions is now recommended (BTS Guidelines, 2010) and ultrasound marking (X-spot) is no longer acceptable.

At our DGH, a new pleural service has been established to provide a high quality, patient-centered and streamlined service for patients with pleural effusions, performing therapeutic and diagnostic procedures under live ultrasound guidance. It has been designed to improve patient safety, reduce length of stay and offer training opportunities to trainees. A respiratory consultant, trained to level two in thoracic ultrasound, established the pleural service in May 2011. A dedicated side room was equipped with an ultrasound machine and a trolley filled with the necessary equipment for pleural procedures. Pleural service protocol has been developed and approved by the Acute Medicine and the Respiratory departments. Referrals are accepted from inpatient wards, Emergency department and outpatient clinics. The "Inpatient Pleural Service" provides diagnostic/therapeutic pleural procedures 5 days a week within working hours, while a "Ambulatory Pleural Service" is designed to treat patients in an ambulatory setting within 72 hours of referral.

Between 01/05/2011 and 31/04/2012, 83 thoracic ultrasound scans were carried out and 72 ultrasound-guided interventions were performed (26 Seldinger chest drains, 2 PleurX catheters and 44 pleural aspirations). There were only 3 complications reported (2 small pneumothoraces, 1 vasovagal syncope). Patient feedback was excellent with patients particularly appreciating undergoing pleural procedures as a day case. Inpatient length of stay has reduced from 6 days (median) to 1 day (median).

The number of thoracic ultrasounds performed by radiology department decreased significantly from 123 to 84, despite an 11% increase in Emergency department attendances related to closure of a nearby hospital.

The collected data proves that the pleural service increased patient safety, reduced patient waiting times, reduced length of stay, helped avoid admissions, decreased radiology workload and made financial savings.

P118 ABRAMS-NEEDLE PLEURAL BIOPSY REMAINS A USEFUL INVESTIGATION IN SUSPECTED PLEURAL TUBERCULOSIS

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Current British Thoracic Society guidelines suggest that Abrams needle biopsy is only useful in areas of high incidence of tuberculosis and suggest that thoracoscopic pleural biopsy or image guided cutting-needle biopsies may be preferable.[1] A recent study suggested that the low yield of culture of pleural fluid may have improved with advancing culture techniques, perhaps reducing any advantage of pleural biopsy.[2] We therefore sought to establish whether or not Abrams-needle pleural biopsies contribute to the diagnosis of pleural tuberculosis in an urban UK setting with an annual incidence of tuberculosis between 60 and 125/100,000.

Methods We reviewed all cases treated for pleural tuberculosis in two inner-city hospitals between 2006 and 2011. The yield of culture of pleural fluid was determined, and for those who underwent a pleural biopsy the yield from culture or typical histological changes was determined.

Results We identified 150 patients with pleural tuberculosis since 2006. In our series, a positive culture from pleural fluid was achieved in 45 of 148 where pleural fluid was send without biopsy at the same procedure (30%; upper 95% confidence interval 39% using Wilson's procedure with continuity correction). 44 patients underwent a pleural biopsy, of which 28 had positive histology or culture (63%; 95% confidence interval 48%-76%). The difference in sensitivity of these tests was statistically significant ($p = 0.0002$).

Conclusion The management of a unilateral pleural effusion where tuberculosis is a likely diagnosis poses a clinical dilemma. Empirical treatment for tuberculosis risks the mismanagement of drug-resistant disease or missing alternative diagnoses, and yet thoracoscopic pleural biopsy is an invasive procedure with significant potential complications. Our data suggest that the yield from culture of pleural fluid alone remains poor and there remains a place for the Abrams-needle biopsy in these circumstances.

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2. Ruan SY *et al.* Revisiting tuberculous pleurisy: pleural fluid characteristics and diagnostic yield of mycobacterial culture in an endemic area. *Thorax*. 2012 Mar 21

P119 PLEURAL SERVICE PROVISION AND TRAINING OPPORTUNITIES IN A DISTRICT GENERAL HOSPITAL IN NORTH EAST LINCOLNSHIRE

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Introduction BTS Pleural disease guidelines in 2010 strongly recommend thoracic ultrasound guidance for all pleural procedures for pleural fluid, and at least level 1 competency is required to safely perform independent thoracic ultrasound. In line with this, our Respiratory department developed a dedicated pleural service over a span of last 10 months. Here we report the pleural service at our hospital and training opportunities for senior and junior level trainees.

Method We retrospectively assessed all the scans done by the Respiratory Department since start of our pleural service in september 2011

Results The total number of ultrasound scans done, based on the radiological appearance of pleural effusion –154 patients x 2 sides=308. Males 100 (200 scans), and females 54 (108 scans). Age of the patient ranging from 30 to 94 with average age of 71 yrs.