Methods Two trained readers independently reviewed 100 randomly selected CT thorax scans from individual patients (mean age 63 years [SD 15]) and noted the number, size and characteristics of any nodules present. Economic analysis was based on costs of CT scan (low dose CT = £115) and the number of additional follow-up CT scans required.

Abstract P52 Figure 1.

Results Overall, 249 nodules were detected in 86 patients; 9 with a solitary calcified nodule were excluded. Of the remainder, 22 (28%) had nodule (s) < 4 mm, 28 (36%) 4–6 mm, 13 (17%) 6–8 mm and 21 (27%) >8mm. Assuming that all patients were high risk, based on Fleischner guidelines the total number of CT scans required over 2 years would be 15 (<4 mm), 56 (4–6 mm) and 39 (6–8 mm) at a cost of £1725, £6440 and £4485 respectively.

Discussion Over three quarters of our patients in this random sample had significant incidental pulmonary nodules, and their surveillance according to current guidelines would result in a significant burden to the healthcare system, not only in terms of cost but also through increased clinician time and patient anxiety. New protocols for the follow up of these low-risk patients are required if the healthcare economy is to cope with this increasing surveillance burden.

P53 THE UTILITY OF PET-CT IN DETECTING NON-NODAL EXTRATHORACIC METASTASES IN LUNG CANCER COMPARED TO THE STAGING CT

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Background NICE Lung Cancer Guidelines 2011 recommend performing a PET-CT in patients being considered for radical treatment after a staging CT of the neck, chest and liver has been performed. If mediastinal lymphadenopathy is detected by CT and the aetiology is determined by intervention, the true value of PET-CT is in the detection of non-nodal extrathoracic metastases. The yield of PET-CT in detecting non-nodal extrathoracic metastases has not previously been reported in comparison to that of reviewing the prior staging CT.

Methods 235 consecutive lung cancer patients with no known extrathoracic metastases referred for a staging PET-CT scan prior to radical therapy were included. All patients underwent a contrast-enhanced CT of the neck, chest and liver and a whole body PET-CT.

Results The median age at diagnosis was 72 years, 141 men (60%). Patients had stage Ia (16%), Ib (19%), IIa (6%), IIb (7%),

IIIa (25%), IIIb (6%) and IV (20%) disease. The median interval between the CT and PET-CT scans was 25 days (IQR, 18–29). 21 (9%) patients had 25 extrathoracic and extra-cerebral metastases. 9 metastases were identified on the CT component of the PET-CT and review of the prior staging CT. 16 metastases were not visible on the staging CT scan; 4 (humeral and pelvic) bone metastases were outside the staging CT field of view, 6 metastases had developed since referral (median scan interval 28 days; IQR, 19–39), and 6 were only identified on PET-CT.

Conclusion The addition of pelvic CT in patients referred for PET-CT staging prior to radical therapy may allow for increased detection of extrathoracic metastases. PET-CT detects extrathoracic metastases which were missed or invisible on the staging CT. Lung cancer patients should be offered a contrast-enhanced CT of the neck, chest, abdomen and pelvis at staging. Potentially, an interval CT scan should be performed if a delay of greater than 30 days has occurred prior to the PET-CT scan being performed.

P54 IS F-18 FDG PET/CT ACCURATE IN DETECTING NODAL DISEASE IN PATIENTS WITH SUSPECTED LUNG CANCER?

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Background Accurate assessment of mediastinal lymph nodes is crucial in determining the management strategies in patients with lung cancer, particularly in those suitable for radical treatment. Positron emission tomography/computed tomography (PET-CT) is currently the best available imaging tool to assess nodal involvement and current guidelines recommend further sampling of PET positive lymph nodes to confirm the diagnosis using image-guided or surgical techniques to achieve the best treatment outcomes. We proceeded to look at the accuracy of (18) F-FDG PET/CT in detecting nodal metastasis in lung cancer.

Methods Retrospective study of 68 pathologically confirmed metastatic lymph nodes obtained using endobronchial ultrasound (EBUS) guided needle aspiration between Jan 2009 and Jan 2012. All pre-procedure PET/CT images were reviewed by a Consultant Radiologist who was blinded to the EBUS findings and the pathology results. PET standardised uptake value (SUVmax) of the primary lung lesion and suspected lymph nodes was measured. Data was collected from our EBUS database and analysed.

Results Of the 68 lymph nodes, 24 were subcarinal, 14 right lower paratracheal, 6 left lower paratracheal, 2 upper right paratracheal, 1 right inter-lobar, 10 right hilar and 11 were left hilar. EBUS lymph node size (mm) 18 mean, SD 6 (range 7–34). Mean PET SUVmax of the lymph nodes was 9.1, 6.7 SD (2–34); mean PET SUVmax of the primary tumour (n = 50) was 10.6(7.6 SD). 23 nodes were squamous, 17 nodes adenocarcinoma, 9 small cell, 13 non-small cell (not otherwise specified), 5 extrathoracic, and 1 neuroendocrine. 52 nodes were positive on PET, 9 were negative and 7 indeterminate.

Conclusion Our results show that out of the 68 pathologically confirmed lymph nodes 52 were positive on PET/CT with diagnostic accuracy of 76%. SUVmax may be used as a guide to characterise the nodes but not as a confirmatory tool. Despite limitations PET/CT is accurate and it is complemented by image-guided sampling in the lung cancer diagnostic pathway.

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P55	SHOULD INITIAL LUNG CANCER STAGING INCLUDE THE PELVIS?

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Introduction Current NICE guidance indicates that lung cancer should be staged by a contrast enhanced chest CT scan which includes the liver and adrenals, and to look for distant metastases those with potentially curable disease should be offered PET-CT scanning. However, the latter is expensive and limited in availability, and it has been suggested that including the pelvic area in the staging CT scan might obviate the need (Botchua *et al* 2012). We looked at 284 PET-CT scans performed for the staging of lung cancer in our unit to test this further.

Method We selected all PET-CT scans that showed distant metastases (and therefore upstaged the disease) for further scrutiny. In those where pelvic deposits were visible on the PET component, the CT element was reviewed to establish whether the diagnosis of pelvic metastases could have been made by CT scan alone.

Results 23 PET-CT scans (8.1%) identified distant metastatic disease, in 3 (1.1%) cases in the pelvic area. Of these, 2 had bony metastases that were visible on the CT element of the scan: in the remaining case the PET element demonstrated increased uptake around a joint replacement and CT component demonstrated a pathological fracture.

Conclusion This study has shown that if the pelvic area was included in the CT staging scan for lung cancer, in our cohort of 284 patients, only 3 (1.1%) would not have required a subsequent PET scan. In the remaining patients, the additional burden of pelvic CT in terms of radiation exposure and financial expense cannot be justified and therefore we do not recommend that the protocol for a staging CT scan in lung cancer is altered to include the pelvis.

P56	MALIGNANT PLEURAL MESOTHELIOMA IN NORTH EAST SCOTLAND

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Introduction We wished to highlight demographics and evaluate prognostic factors and outcomes in all patients regionally with confirmed malignant pleural mesothelioma (MPM).

Methods Data relating to all consecutive patients between 2002 and 2012 (inclusive) with biopsy proven MPM were identified from a local pathology database. Demographics, diagnostic method, histological sub-type, survival and laboratory parameters at diagnosis were extracted from computer archives. Comparisons were made between patients surviving greater than 1 year and less than one year.

Results 138 patients had confirmed MPM between 2002 and 2012 (118 (86%) male, 57% right sided, and median age 70

years (range 48–88)). Of these, 55% were classed as epithelioid, 16% biphasic, 16% sarcomatoid and 13% had no definitive typing. Overall median survival from diagnosis was 292 days (IQR 72, 497); 406, 297, 61 and 314 days for epithelioid, biphasic, sarcomatoid and "not defined" respectively. Factors associated with a higher risk of dying in less than one year after diagnosis were advanced age (median 73 vs 66 years, $p = 0.0002$), low haemoglobin (12.8 vs 14.0 g/L, $p = 0.001$), high platelets (366 vs 317 $\times 10^9$/L, $p = 0.0269$), low sodium (138 vs 139 mmol/L, $p = 0.02$), low albumin (38 vs 41 g/L, $p = 0.0003$), high alkaline phosphatase (101 vs 85 U/L, $p = 0.013$) and high C reactive protein (64 vs 26 mg/L, $p = 0.0051$). Between 2006–2012, 37 of 76 patients received chemotherapy; those who did had a greater median survival (median survival 423 days (IQR 326–624) vs 95 days (IQR 60–321), $p = < 0.0001$).

Conclusion Overall median survival in consecutive patients with MPM was 292 days, with adverse prognostic factors being low haemoglobin, sodium and albumin, high platelets, alkaline phosphatase and CRP and advanced age. Patients receiving chemotherapy had a better prognosis overall.

P57	FAST TRACK REFERRAL OF PATIENTS WITH MALIGNANT MESOTHELIOMA IS NOT ASSOCIATED WITH BETTER SURVIVAL

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Background Few studies have examined the effect on survival in lung cancer of fast-track referral, while those that do have questioned the utility of the two-week fast track referral rule [1]. Paradoxically, delayed referral was associated with longer survival [2]. No studies which examined this factor in mesothelioma survival have been published. We therefore examined the effect of mode of referral on survival in malignant mesothelioma.

Methods All 88 patients with malignant mesothelioma in York and North Yorkshire between 2002–2011, where referral data was known, were examined for age at presentation, performance status (**PS**) and survival using Cancer Registry data with SPSS v19.

Results Three categories of referral were identified: 33 Fast Track (**FT**), 20 non Fast Track (**NFT**) and 35 Acute Admission (**AA**).

There was no difference in median [interquartile range] for age between **FT** (71.7 [68.3–74.6] years), **NFT** (69.4 [65.0–73.8 years) and **AA** (74.1 [70.7–77.5] years).

AA patients had a worse **PS** (2 [1.4–2.2]) than **FT** (1 [0.7–1.3]) and **NFT** (1 [0.5–1.5]), $p = 0.03$, analysis of variance (ANOVA). No difference was seen between **FT** and **NFT**.
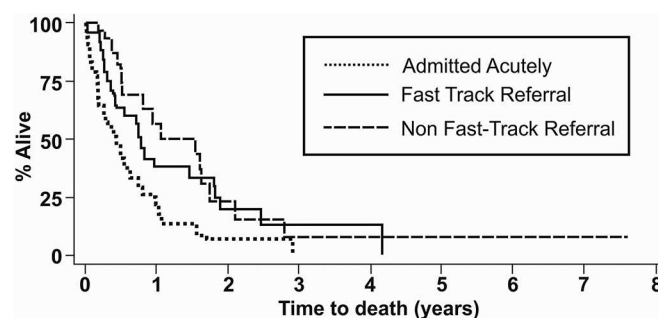
Abstract P57 Figure 1.

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