features, including data management and data audit tools using traceability functions, plus the facility to transfer questionnaire data directly into the database using a "magic pen" (thereby reducing time and the potential for transcription errors) will soon be available.

Funding: Funding was provided by Smiths Medical, Asthma UK, CF Trust and the MRC.

P80 DEVELOPING A CAREGIVER QUALITY OF LIFE SCORE FOR WHEEZY PRESCHOOL CHILDREN

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Assessing asthma control in the preschool age group is problematical. Lung function is difficult to measure and may not be closely related to the quality of life (QOL). Validated QOL tools exist for caregivers of school-age asthmatic children. We aim to develop a QOL tool for wheezy preschool children and their families. As the first stage, we have explored QOL issues as perceived by caregivers and health professionals.

We interviewed 10 individual parents of children aged 1–5 years with recurrent wheezing, ran two parent focus groups involving a further nine parents and interviewed six health professionals. Parents were asked open-ended questions about how wheezing illness affected their child's QOL and their own QOL. Professionals were asked what aspects of QOL were most likely to be affected by wheezing disease in preschool children and their carers.

Prominent themes that emerged were as follows. Parents on their child's QOL: Missing fun activities, need to limit exercise, sleep disturbance. Parents on own QOL: Anxiety about child catching respiratory infections, worry about spotting deterioration, missing work/college, concern about not being listened to by professionals. Professionals on child's QOL: Sleep disturbance, restriction of activity, upset about taking medications. Professionals on caregiver QOL: Stress of remembering to give medication, disturbed sleep, employment prospects.

Although there was considerable overlap, professionals focussed on the problems of medication impinging on QOL, whereas caregivers rarely mentioned this. Compared with items in the Juniper caregiver QOL questionnaire for school-age asthma, issues about acute attacks, as opposed to chronic symptoms, predominated.

Lung cancer: clinical aspects

P81 ONE STOP LUNG SHADOW CLINIC: IS IT REALLY WHAT THE PATIENT WANTS?

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Introduction: Although the 31 and 62-day lung cancer target is easily achieved by investigating patients in one stop lung shadow clinics (OSLSC), some argue patients may find it too stressful to have all the investigations (bloods, ECG, spirometry, computed tomography scan, bronchoscopy) and consultation in a day. To investigate this we conducted a retrospective survey among patients seen in our OSLSC.

Method: Questionnaires were sent to 185 consecutive patients enquiring whether: GP explained the reason, adequacy of preclinic information, seen on time, happy to have all tests on the same day, it was difficult to cope, they prefer 2-day appointments, the wait was too long in between tests, waiting time acceptable, expectations met, other clinics should be run similarly and overall satisfaction. We compared the responses (anonymous) in different age groups (<70 years, 70 years and above), with or without lung cancer and gender.

Results: Of 116 (mean age 69.5 years (range 21–90), 60<70 years, 69 male, 38 lung cancer) responses, 78% thought GP explained the reason (9% disagreed), 83% thought preclinical information was adequate (11% disagreed), 81% seen on time (12% were not), 89% were happy to have all test done in a day (4% disagreed), 9% found difficult to cope (84% did not), 7% wanted 2-day appointment (89% disagreed), 83% did not think wait between the tests is too long (11% disagreed), 85% thought <30 minutes is an acceptable wait before first appointment, 97% cases had events as expected, 98% thought other clinics should be run similarly, 95% were satisfied (5% did not record). No significant difference observed in different age, gender and with or without lung cancer to all responses except patients aged 70 years and above felt more information could be given prior to clinic ($p<0.05$).

Conclusion: Patients' views favour OSLSC. With appropriate preclinic information patients did not find it stressful irrespective of their age, gender and diagnosis. This saves them several hospital visits, especially in our rural setting. Elderly patients wanted more preclinic information. We plan to change our information pack on reflection and give patient choices. This survey reinforces our argument for OSLSC and we would like to encourage other units to experiment with this.

P82 DO WE PREPARE PATIENTS ADEQUATELY FOR THE LUNG CANCER CLINIC EXPERIENCE?

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Introduction: In order to achieve tight lung cancer waiting time targets, patients need to be processed rapidly, such that they may have little time to assimilate and reflect on their disease. This is particularly important at first referral, when the information given will play a major role in their appreciation of the subsequent journey. To look at this further, we surveyed the information given to patients prior to their attendance at our "one-stop" rapid access clinic where they undergo computed tomography scan, consultation and bronchoscopy (if indicated) on the same day.

Patients and Methods: Using a structured questionnaire, one researcher (VS) interviewed 50 consecutive patients (mean age 68 years (range 41–86); 80% from primary care, 4% from A&E and 16% from other clinicians; 62% male) on arrival at the rapid access clinic.

Results: Although 84% of patients were informed of the appointment by the referrer (31 (74%) in person, nine (21%) by phone and two (5%) by letter), the remainder only knew when they received a communication from the hospital. Reasons given for referral included "a shadow on chest *x* ray" needing further investigation in 78%, but suspected lung cancer was mentioned in 20%. However, in 12% no reason was given. Although 60% received no specific information about the rapid access clinic, 34% were told to expect some tests, but only 10% were aware they may need to stay the whole day. The hospital contacted patients by phone and letter in 72%, by letter alone in 12%, and the remaining 16% by phone alone: 72% of patients indicated this communication did not adequately prepare them for their first appointment. All 92% seen within a week of referral were aware of their clinic appointment. Only 10 patients suspected a diagnosis of lung cancer.

Conclusions: This study highlights deficiencies in the way we inform patients about the nature of our rapid access clinic and this is not limited solely to primary care. We are working with referring colleagues and hospital systems to improve their communication with patients to ease the stress of their journey.

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P83 INTRODUCTION OF ENDOBRONCHIAL ULTRASOUND: EXPERIENCE OF A DISTRICT GENERAL HOSPITAL

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Introduction: Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS–TBNA) is used in the diagnosis and staging of lung cancer. There is also evidence to support its use in lymphoma and sarcoidosis. Our foundation NHS trust serves a population of 365 000 patients, with approximately 310 cases of lung cancer per year. A new EBUS service was set up in January 2008 providing for patients within our own and neighbouring trusts. All the EBUS–TBNA procedures were incorporated into existing bronchoscopy lists and performed by a single consultant with an SpR and supporting services in pathology and endoscopy.
Methods: Data from all patients who had an EBUS–TBNA were prospectively collected from January to June 2008.
Results: 61 EBUS–TBNA procedures on 54 patients (median age 68 years, range 18–78, 32 men/22 women) were performed. Indications included histological diagnosis of suspected cancer (n = 46/54, 85%), staging of known cancer (n = 5/54, 9%) and possible sarcoidosis (n = 3/54, 6%). Two procedures were abandoned as they were poorly tolerated due to coughing. Of the remaining 59 procedures, 46/59 (78%) yielded positive cytology; 27/59 (46%) were malignant, 18/59 (30%) were lymphoid tissue and 1/59 (2%) was granuloma consistent with sarcoidosis. Of the 27 cases of malignancy, no patients required any further invasive diagnostic investigation. Of the 13/59 (22%) reported as insufficient for diagnosis, 4/13 had a second EBUS–TBNA, all with a positive result. An improved diagnostic yield from EBUS–TBNA was noted with increasing experience; in sequential procedures the first group (n = 15) had a positive yield of 53%, the second 93% (n = 15), the third 80% (n = 15) and the final group 86% (n = 14). There were no complications of the procedure.
Conclusions: These data demonstrate how an EBUS–TBNA service can be set up in a district general hospital to provide an effective, quick and safe means of diagnosing and staging lung cancer and the avoidance of more invasive procedures. The diagnostic yield of EBUS–TBNA improves with experience.

P84 ENDOBRONCHIAL ULTRASOUND: PATIENTS' EXPERIENCES

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Introduction and Objectives: Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS–TBNA) is a safe and effective technique used in the diagnosis and staging of lung cancer. There is also evidence to support use of EBUS–TBNA in the diagnosis of lymphoma and sarcoidosis. NICE has recently published guidelines for EBUS–TBNA and comment that some patients have reported pain during the procedure. In our experience we feel that with appropriate sedation and analgesia patients do not feel pain during EBUS–TBNA and we sought to investigate patients' experiences with this procedure.
Methods: All patients who had EBUS–TBNA in our district general hospital from January to June 2008 were sent a postal questionnaire exploring their experience with EBUS–TBNA.
Results: 54 patients underwent EBUS–TBNA from January to June 2008. All but one patient had a combination of xylocaine spray, midazolam (median dose 6 mg, range 4–12 mg) and fentanyl (median dose 75 μg, range 25–150 μg). One patient had a general anaesthetic due to a severe needle phobia. 49 questionnaires were sent out (excluded patients included one who had a general anaesthetic, two who had died and two whose procedures were abandoned early on due to coughing). To date, 59% (n = 29/49) have been returned. 59% of these (n = 17/29) reported no memory of the procedure, 34% (n = 10/29) reported some memory of the procedure and 7% (n = 2/29) reported remembering the entire procedure. Only one patient reported feeling pain during the procedure (pain score 3/10 severity) and 17% (n = 5/29) reported pain after the procedure (pain score range 1–7/10). Of the 6/29 patients reporting pain, all would recommend the procedure to a friend in similar circumstances. Of all the patients, only one would not recommend the procedure to a friend in similar circumstances as their EBUS result was ''negative'' (lymphoid tissue on cytology) and they required an alternative investigation. The only side effects reported were of a sore throat (3/29 patients) and there were no complications.
Conclusions: With appropriate sedation and analgesia, EBUS–TBNA is a well tolerated procedure and the majority of patients do not feel pain during or after their procedure.

P85 CORRELATION BETWEEN COMPUTED TOMOGRAPHY APPEARANCE OF LUNG MASSES AND TUMOUR VISIBILITY AT BRONCHOSCOPY

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Introduction and Objectives: The NICE guidelines for the diagnosis of lung cancer state that a computed tomography (CT) scan should be performed prior to requesting subsequent diagnostic investigations. However, current practice is often to order bronchoscopy and CT simultaneously, which may result in unnecessary investigation and a delay in diagnosis and treatment. The guidelines state that bronchoscopy should only be performed on patients with a central lung mass on CT but does not clearly define a central mass. We hypothesised that by examining the CT, masses that were <2 cm from a lobar bronchus would be most likely to be visible at bronchoscopy.
Method: A retrospective study including all patients on a hospital lung cancer database over one year was performed. Patients were included if they had a mass on CT and underwent bronchoscopy. All eligible patients had data collected on demographics, site of mass and distance from a lobar bronchus on CT, tumour visibility at bronchoscopy and biopsy positivity.
Results: Of 527 patients, 126 met inclusion criteria, 64% were male with a mean age of 67.9 years. 70% (n = 88) had visible tumour at bronchoscopy and 82% of these had positive biopsies. Positive biopsy rates of visible tumour depending on lobe varied from 75% (RML) to 100% (lingula) but were not significantly different ($p = 0.99$). 78% (n = 99) had a lung mass <2 cm from a lobar bronchus with 22% (n = 27) >2 cm away. Those with a mass <2 cm were statistically more likely to have visible tumour at bronchoscopy (85% vs 15%, $p<0.001$). 94% (n = 78) of masses <0.5 cm from a lobar bronchus were visible, compared with 52% (n = 21) of those at 06–2.0 cm and 15% (n = 27) of those >2 cm ($p<0.001$).
Conclusions: Endobronchial biopsy of visible tumour is highly sensitive in the diagnosis of lung cancer. However, 30% of patients undergoing bronchoscopy did not have visible tumour and needed further investigations. Tumours <0.5 cm from a lobar bronchus are likely to be visible and warrant bronchoscopy, whereas those >2 cm are unlikely to be visible and should not have bronchoscopy. Tumour that is 0.6–2 cm is likely to be visible in 50% of cases and therefore bronchoscopy should not necessarily be the diagnostic investigation of choice. This supports NICE guidelines that CT should be examined prior to requesting bronchoscopy and provides a workable definition of a central lesion.

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P86 AN ANALYSIS OF THE DIAGNOSTIC YIELD AND COMPLICATION RATE OF FINE NEEDLE ASPIRATES AND CORE BIOPSIES OF 100 CONSECUTIVE PATIENTS UNDERGOING PULMONARY LESION SAMPLING

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Background: Radiologically guided lung biopsy is an important technique for the diagnosis of peripheral lung lesions. Currently, this may be performed by fine-needle aspiration (FNA) using a 20 or 22G needle, which provides cytological samples or by 18G cutting needle biopsy (CNB), which produces histopathological specimens. CNB biopsy may be performed with multiple pleural passes or using a coaxial system allowing multiple passes through a single pleural puncture with a 16G two-part needle. The reported diagnostic yield of these techniques ranges from 64% to 97%. Despite the advantages of histology over cytology in differentiating lung lesions, conflicting evidence exists surrounding the yield and complication rates of CNB.[1]

Aim and Methods: At our institution, an 18G coaxial needle system for radiologically guided lung biopsies was introduced in 2007. We aimed to evaluate the diagnostic yield and complication rate of coaxial versus non-coaxial core systems versus FNA systems. The records and computed tomography (CT) images of 100 consecutive patients who underwent percutaneous FNA or core biopsy lung lesions (mean lesion size 27 mm; range 8–129 mm) were retrospectively reviewed.

Results: From 1 June 2006 to 1 August 2008, 100 radiologically guided FNA and core biopsies of pulmonary lesions were performed. 30 patients underwent FNA, 49 had CNB using a non-coaxial system and 21 patients had CNB using a coaxial system. Results are summarised in the table. A definitive diagnosis was made in 83 patients, with 17 patients requiring repeat or alternative biopsy. The sensitivity of FNA, non-coaxial CNB and coaxial CNB was 80%, 80% and 90%, respectively. Pneumothoraces visualised immediately post-procedure were present in 12 (40%), nine (18%) and seven (35%) patients undergoing FNA, non-coaxial CNB and coaxial CNB, respectively. One patient, who had non-coaxial CNB, required intercostal drainage. Haemorrhage was visible on CT surrounding the needle track and biopsy site in nine (45%) cases undergoing coaxial CNB. One self-limiting haemoptysis was observed and no patients required blood transfusion.

Conclusion: CNB with an 18G coaxial needle is an accurate technique for the diagnosis of peripheral lung lesions with an acceptable incidence of complications.

1. **Manhire A,** *et al*. Guidelines for radiologically guided lung biopsy. *Thorax* 2003;**58**:920–36.

P87 AUDIT OF COMPUTED TOMOGRAPHY-GUIDED LUNG BIOPSY: DOES PLACEMENT OF THE AFFECTED LUNG IN THE DEPENDENT POSITION INFLUENCE THE INCIDENCE AND/OR SEVERITY OF COMPLICATIONS?

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Introduction and Objectives: Computed tomography (CT)-guided lung biopsy is a well recognised method of obtaining tissue diagnosis in pulmonary lesions of unknown nature. Pneumothorax, haemothorax and haemoptysis are the commonest of complications encountered. It is common practice to biopsy patients in supine, prone or lateral decubitus, placing the lesion at the highest position allowing a vertical needle approach. A breath-hold is used during needle advancement. The method we use attempts to reduce movement of the lesion with respiration, minimise the risk of pneumothorax and confine the occasional bleed to the lung being biopsied. We attempt to achieve this by positioning the side of the lesion in a dependent position, whenever deemed necessary and technically possible and angling the needle to reach the abnormality. In our technique, the patient is not asked to breath-hold. The authors set out to assess the effect of this approach on post-procedural complications.

Methods: We have reviewed retrospectively all the lung biopsies performed by us, using this concept, from 1 December 2006 to 20 July 2008. The data were sourced from our local hospital and radiology information systems and our PACS database. We have compared our results with the figures from a previous audit of departmental biopsies.

Results: A total of 74 lung biopsies were audited, 34 of which were male and 40 female with a mean age of 68 years. 45 (61%) were performed with the affected lung in a dependent position. The overall incidence of pneumothorax was 15%, none of which required any intervention. One patient suffered a small self-resolving haemothorax. This and another patient with pneumothorax required an overnight stay for observation. Another patient developed self-resolving minor haemoptysis. None suffered air embolism, major haemorrhage or death. Compared with a previous departmental audit, when this concept had not yet been adopted, the overall incidence of pneumothorax reduced from 30% to 15%. The percentage of pneumothoraces requiring intervention reduced from 35% to 0%.

Conclusions: Positioning the patient with the affected lung in the dependent position when necessary and possible and angling the needle to reach the lesion may reduce complications, improving the safety of CT-guided lung biopsy.

Abstract P86 Table Procedure data, sensitivity and complication rates of patients undergoing FNA and CNB of pulmonary lesions

	FNA	Non-coaxial CNB	Coaxial CNB
No of procedures	30	49	21
Median number of samples (range)	2 (1–8)	3 (1–8)	3 (0–6)
Mean lesion size (range)	29 mm (18–71)	51 mm (14–129)	38 mm (8–110)
Mean distance from pleura (range)	26 mm (10–62)	8 mm (2–52)	15 mm (1–63)
No of procedures traversing lung	18 (60%)	14 (28%)	10 (50%)
No of procedures traversing emphysematous or fibrotic lung	8 (27%)	7 (14%)	5 (25%)
Positive diagnosis	24	39	19
Sensitivity	80%	80%	90%
Immediate pneumothorax visible on CT (%)	12 (40%)	9 (18%)	7 (35%)
Admission for extended observation or chest drain	2 (7%)	1 (2%)	1 (5%)
Evidence of haemorrhage on CT immediately post-procedure	8 (27%)	8 (16%)	9 (45%)
Haemoptysis	0	0	1

CNB, cutting needle biopsy; CT, computed tomography; FNA, fine-needle aspiration.

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P88 PRE-CLINIC COMPUTED TOMOGRAPHY FOR SUSPECTED LUNG CANCER: EFFECT ON WAITING TIMES AND PATIENT ACCEPTABILITY

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Background: Early diagnosis clinics are recommended for patients with suspected lung cancer on the basis that resection rates and hence survival may be improved. However, a relatively low proportion of patients seen within these clinics is subsequently diagnosed with lung cancer. Computed tomography (CT) plays a central role in the diagnostic pathway and a number of centres now recall patients automatically for CT following an abnormal chest *x* ray. We have adapted this system to select only patient with suspicious CT findings for a fast-track clinic appointment. The effect of this pathway on diagnostic times and patient acceptability has been assessed.

Methods: Diagnostic data were collected on all patients referred to clinic with suspected lung cancer from June to November 2007. Questionnaires were sent to patients who had been re-called for CT following abnormal chest *x* ray, regardless of whether they were subsequently seen in clinic. The results were compared with audit and patient satisfaction data collected May to October 2006, prior to the introduction of the pre-clinic CT pathway.

Results: The diagnostic details and patient satisfaction results are shown in the table.

Conclusions: The introduction of a pre-clinic CT pathway to select patients for the fast track lung cancer clinic was associated with a significant increase in the proportion of patients diagnosed with lung cancer and a significant reduction in diagnostic times. The latter probably relates to shorter clinic waiting times (due to fewer referrals) and pre-clinic planning for histological confirmation. Furthermore, this accelerated diagnostic pathway appeared to be acceptable to the vast majority of patients, with significantly fewer patients feeling they had waited too long for their tests.

Abstract P88 Table

	2006	2007	p Value
No of patients seen in clinic	225	162	
Final diagnosis of lung cancer	57 (25%)	67 (41%)	<0.001*
Time from referral to MDT meeting	32 (12–151)	14.5 (7–81)	<0.001*
No of patients sent questionnaire	167	122	
No of questionnaires returned	80 (48%)	49 (40%)	
Patient rating of diagnostic process			
Too short	0%	2%	<0.05†
Just right	80%	91%	
Too long	20%	7%	

*Mann–Whitney test; †χ^2 test. MDT, multidisciplinary team.

P89 THE NATIONAL LUNG CANCER AUDIT: PROGRESS IN THE FIRST 3 YEARS—PATIENT OUTCOMES

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Introduction: The National Lung Cancer Audit is an audit of lung cancer run jointly by the Royal College of Physicians and the Information Centre for Health and Social Care. Its development was driven by the realisation that lung cancer outcomes vary widely across the UK and are poor compared with other western countries. The aim of the audit is to record outcomes in lung cancer on a large scale and through case-mix adjustment, start to explain the wide variations noted. Although recently Wales and Scotland have been submitting data to the audit, this abstract presents results from England only for the first 3 years of the audit, focusing on patient outcomes.

Abstract P89 Table

	2005 (%)	2006 (%)	2007 (%)
Confirmed histological diagnosis	65	66	68
Histology			
NSCLC	44.8	43.9	45.5
SCLC	10.3	10	9.6
Mesothelioma	3.7	3.5	4.2
Discussed at MDT meeting?	66	87	91
Any anti-cancer treatment?	45	50	52
Overall surgical resection rate	9	9.4	10.3
NSCLC resection rate	13.8	14.3	15.2
SCLC chemotherapy rate	57.7	61.7	64.5
6-Month survival	22.3	24.6	34.7*
1-Year survival	15.6	18.8	n/a

*This figure probably overestimates the actual 6-month survival and will fall as more data becomes available. MDT, multidisciplinary team; NSCLC, non-small-cell lung cancer; SCLC, small-cell lung cancer.

Results: Results suggest that the quality of care is improving, with annual increases in the proportion of patients being discussed in a multidisciplinary team, proportion of patients receiving anti-cancer treatment, proportion of small cell lung cancer patients receiving chemotherapy and in the surgical resection rate (see table). Moreover, measures of 6-month and 1-year survival also appear to be rising.

Conclusions: As data quality has improved, so we can be more confident that these figures are a true reflection of patient outcomes. However, these averages hide wide variations in outcomes across different units. It is hoped that case-mix adjustment of outcomes by trust and network will explain these previously observed geographical variations in lung cancer outcomes.

P90 QUALITY OF LIFE AFTER RADIOTHERAPY AND STEROIDS IN PATIENTS WITH INOPERABLE BRAIN METASTASES FROM NON-SMALL-CELL LUNG CANCER: THE QUARTZ TRIAL

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Up to a third of all patients with non-small-cell lung cancer (NSCLC) will present with or develop brain metastases. Such patients tend to experience rapid deterioration in both neurological function and performance status and have a poor prognosis, generally with survival times of weeks rather than months. Although for patients with inoperable brain metastases the standard therapy is a combination of steroids and whole-brain radiotherapy (WBRT), WBRT causes side effects and has never been shown to result in an improved quality or length of survival.

The QUARTZ trial has been devised to address this question and compares optimal supportive care (OSC), which includes dexamethasone titrated to clinical effect to the lowest dose possible, and OSC plus WBRT. The primary endpoint is quality of life years to reflect the fact that both quality and duration of survival are equally important.

The trial has been designed pragmatically. All patients with inoperable brain metastases from NSCLC are eligible (whether initially presenting with, or subsequently developing, brain metastases). Inclusion is thus based purely upon the clinician and patient being uncertain that WBRT will be of benefit.

As respiratory physicians will often be the first professional group to suspect or confirm the diagnosis of brain metastases, it is important that all such patients are discussed at the local lung cancer multidisciplinary team meeting and provided with dexa-

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methasone as part of their normal treatment package. When there is any uncertainty that an individual patient would benefit from WBRT, the preferred option should always be referral to a clinical oncologist for consideration of the QUARTZ trial.

Data for QUARTZ are collected via weekly telephone assessments between the patient (and carer if consented for participation) and their nurse using a questionnaire including the EQ-5D, EQ-VAS and a list of symptoms.

QUARTZ is open to recruitment, and to date 49 patients and 39 carers have been recruited, with overall data compliance of more than 90%. There are currently 62 recruiting centres, including six centres from TROG (Trans-Tasman Radiation Oncology Group in Australia and New Zealand).

For more details or to register your centre's interest please contact QUARTZ@ctu.mrc.ac.uk.

P91 NO LUNG CANCER AT RESECTION: AN AUDIT OF THE LUNG CANCER MULTIDISCIPLINARY TEAM

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The assessment of solitary pulmonary nodules (SPN) can represent a diagnostic challenge to respiratory physicians and radiologists. This study aimed to audit the referrals to thoracic surgery from the lung cancer multidisciplinary team (MDT) and identify patients with a benign diagnosis at resection.

All patients with a SPN presented at the lung cancer MDT were identified from the lung cancer database between 1 August 2005 and 31 May 2008. The case records of all patients referred for surgical resection were reviewed and data pertaining to the investigations undertaken and the final histological diagnosis were obtained.

During the study period 119 patients were identified. 52% of the patients were male and 48% female. The median age of the patients was 69.6 years (range 41.4–88.8). The commonest diagnosis at resection was non-small-cell carcinoma. 45 (37.8%) of the patients had a tissue diagnosis established prior to referral for surgical resection. The remaining 74 (62.1%) had a working diagnosis of a possible malignant SPN based upon history and radiological imaging. Within the group of patients with no tissue diagnosis prior to surgical referral, 63 patients had a positron emission tomography (PET)/computed tomography (CT) scan demonstrating an FDG avid nodule with a SUV >5. Of these patients, five (7.9%) had a benign diagnosis at surgical resection. 11 patients without a tissue diagnosis prior to surgical referral did not have a PET/CT scan, all of these patients had a malignant diagnosis at resection.

False positives in PET/CT scanning of SPN are well recognised and include inflammatory or infectious conditions. PET/CT has been demonstrated to have a higher sensitivity (96% vs 81%), lower specificity (88% vs 93%) and greater accuracy (93% vs 85%) than helical CT in the assessment of SPN.[1] This study demonstrates that the risk of a benign diagnosis at surgical resection for patients with a SPN, when no tissue diagnosis has been established following clinical assessment, radiological assessment and MDT review is 7.9%. Patients need to be advised of this risk prior to surgical referral and resection.

1. **Yi *et al***. *J Nucl Med* 2006;**47**:443–50.

Abstract P91 Table

Diagnosis at surgical resection	N (%)
Primary lung adenocarcinoma	47 (39.5)
Squamous cell carcinoma	45 (37.8)
Large cell carcinoma	11 (9.2)
Adenosquamous carcinoma	3 (2.5)
Carcinoid tumour	2 (1.68)
Melanoma	1 (0.84)
Small and large cell carcinoma	1 (0.84)
Metastatic colon cancer	1 (0.84)
Non-specific inflammation	1 (0.84)
Tuberculoma	1 (0.84)
Chronic inflammation	1 (0.84)
Pulmonary infarct secondary to Churg–Strauss syndrome	1 (0.84)
Aspiration pneumonia	1 (0.84)

P92 LUNG CANCER SURVIVAL IN LEICESTERSHIRE 1990–2006

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Introduction: In the UK lung cancer remains the most common cause of death from cancer with poor 5-year survival. Survival varies between trusts and compares unfavourably with other western countries. Following national service improvement initiatives we restructured our lung cancer services, appointing a lung cancer lead clinician, a thoracic surgeon, a dedicated medical oncologist with an interest in lung cancer, a lung cancer tracker and instituted weekly multidisciplinary team (MDT) meetings. We examined our survival data in the light of these strategies.

Methods: All patients with an LE postcode diagnosed with lung cancer from 1990 to 2006 were collected from MDT meetings, lung cancer registrations, Trent Cancer Registry records and hospital coding. Relative survival at 1, 3 and 5 years was calculated using deaths recorded up to the end of 2007. Survival was broken down by period of diagnosis: 1990–6 and 1997–2006 for 1-year survival; 1990–6 and 1997–2004 for 3-year survival; 1990–6 and 1997–2002 for 5-year survival.

Results: 7319 new lung cancers were diagnosed. Survival had significantly improved at 1 ($p<0.001$), 3 ($p=0.001$) and 5 ($p=0.027$) years. There was a significant increase in median survival ($p<0.001$). When time periods were compared we saw a consistent significant improvement of approximately 50% in median survival and 1, 3 and 5-year survival.

Conclusions: These survival analyses show that progress has been made with an approximately 50% improvement in survival since the early 1990s in our centre. The causes are multifactorial but are likely to be due to service improvement and access to appropriate expertise. However, there is still a long way to go.

Abstract P92 Table

Period	No of patients	Median survival all (months)	1-Year relative survival % (95% CI)	3-Year relative survival % (95% CI)	5-Year relative survival % (95% CI)
1990–6	2821	2.5	17.74 (16.3 to 19.2)	7.1 (6.1 to 8.2)	4.98 (4.2 to 5.9)
1997–2006	4498	4.1	26.25 (24.9 to 27.6)		
1997–2004	3545	3.9		10.81 (9.7 to 11.9)	
1997–2002	2557	3.8			7.45 (6.4 to 8.6)

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