

**REFERRAL AND CLINICAL GUIDELINES FOR
LUNG CANCER
WITHIN NORTH TRENT**

Produced by the
North Trent Lung Cancer Group 2003

INTRODUCTION

Use of This Guideline

This document is intended to provide a framework to ensure uniformity of practice across the Network, and has drawn heavily upon previous North Trent guidelines, and the recent BTS surgical guidelines. It has followed a series of meetings leading up to a Network-wide event, at which the guideline was launched, and feedback canvassed.

Whilst the clinical sections should be applicable to all of the cancer units, a local appendix (Appendix 6) will be required to include information on interactions with other agencies for each individual cancer unit. It is suggested that unit lung cancer leads should take responsibility for inserting this section into the document.

Role of The Cancer Unit MDT within the Network

As a part of the Calman-Hine reforms of cancer services, networks of cancer unit-based lung cancer multidisciplinary teams (MDTs) have been set up countrywide, with the support of a single cancer centre. The MDT has now become fundamental to the management of lung cancer. Each unit's MDT has responsibility for diagnosis, staging and treatment planning (including consideration of entry into approved clinical trials and referral to non-core team members) and some treatment, whilst the network's centre often delivers tertiary treatments, including surgery, radiotherapy and intensive chemotherapy.

Although published evidence for the MDT approach changing hard end-points such as resection rates and survival is lacking, the approach intuitively seems appropriate to a disease such as lung cancer, given the 3 broad directions that the patient journey can take: surgical, oncological, or palliative/supportive. There have been major challenges, many still unresolved, in the establishment of MDTs, including a paucity of trained specialists, finding time in already busy timetables, and developing a new infrastructure to support the meetings. However, whilst it may be optimistic to believe that this approach alone will significantly increase survival from the disease, it is likely to facilitate the efficient use of resources and optimize quality of care within inevitable constraints.

In practice, rather than the hub and spoke approach first envisaged, the structure developed in North Trent is that the members who attend from the cancer centre actually form a part of a number of spokes rather than a hub, which in practice is merely the physical location for the oncology and surgical treatments: these specialists are just as much MDT team members as those members based in the respective units. One aspect of the service that will necessarily continue to take place at the Northern General Hospital is the specialised pathological reporting of resection specimens, which may on occasion require an additional meeting between the thoracic surgeon and histopathologist. There should be no requirement however for the systematic review at the Cancer Centre of cases previously discussed at a unit MDT meeting. If particular circumstances were to arise, due to the unavailability of suitably trained peripheral MDT specialist input for example, particular arrangements may need to be made. Also, in difficult cases MDT team members may need to seek a second opinion. Whilst "super-MDT" meetings for such cases have been considered, practical difficulties dictate that this is unlikely to be an option for the foreseeable future, and until then the arrangements will have to be made as appropriate to the individual case.

Besides management decisions, the MDT meeting is also the ideal point on the patient pathway for the collection of the data required for Cancer Registry submission, local and

national audit and facilitates research and the communication of the relevant data to the other professionals involved in the patient's care, including to referring clinicians and general practitioners. Other more subtle effects include the capacity of the different specialists to teach each other and keep each other in check, and the fostering of subspecialisation by pathologists and radiologists.

Each MDT should also take responsibility for developing the service it provides, most recently in collaboration with the Cancer Services Collaborative. Whilst much can be done at a unit level, many issues including for example the drawing up of guidelines, addressing tertiary service needs, the organization of network-based audit and research needs to be addressed at a network level. In response to this need an executive group, comprising representatives of all the clinical subspecialties, cancer nurses and unit leads has been developed (Lung Cancer Executive for North Trent, LuCENT), which meets quarterly.

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1. PRESENTATION OF LUNG CANCER

Patients suspected of having lung cancer should be seen by a Respiratory Physician within 2 weeks of receipt of the referral (Government '2 week wait target', BTS recommendation).

- The majority of lung cancer patients are smokers >60 years
- Most patients will have an abnormal CXR, but a normal CXR does not exclude lung cancer

Common symptoms:

- Haemoptysis
- Unresolved infection/pneumonia
- Persistent cough
- Persistent chest pain
- Persistent breathlessness
- Weight loss
- Hoarseness

Hospital	FAX number
Barnsley	01226 240526
Chesterfield	01246 552713
Doncaster & Bassetlaw	0800 169 5278
Rotherham	01709 307163/164
Royal Hallamshire	0114 2713754
Northern General	0114 2715745

Other National Targets:

- *All patients to be treated within one month of diagnosis by 2005*
- *All patients to be treated within two months of urgent referral by 2005*
(The NHS Cancer Plan - September 2000)
- *Implementation of waiting times data on all lung cancers for those patients first treated in December 2002 and on urgent GP referrals for suspected lung cancer first seen in December 2002.*
(Health Services Circular HSC 2002/005 - March 2002)

N.B. This requires data to be recorded and submitted to the national database. Data capture will need to begin by early summer (2002) to avoid retrospective data collection.

2. INVESTIGATION OF A POSSIBLE LUNG CANCER

All reasonable attempts should be made to obtain a histological or cytological diagnosis of lung cancer. This diagnosis should be made and transmitted to the patient within 2 weeks of presentation to the Respiratory Physician. Patients unsuitable for, or declining investigations, should have the reason(s) clearly documented in their notes by a member of the MDT.

2.1 INITIAL ASSESSMENT AND INVESTIGATION

All patients should be assessed with:

History and physical examination (looking for signs of SVCO, LN, pleural effusion, signs in the chest, hepatomegaly, bony tenderness)

Assessment of performance status and weight loss

CXR

Spirometry

Screening blood tests - FBC, renal and liver function (including Ca²⁺), LDH

- Bronchoscopy (unless alternative easier route of histological diagnosis eg. CT guided biopsy, lymph node aspiration)
- ECG)
- CT thorax, liver, adrenals) if being assessed for radical treatment

2.2 ADDITIONAL INVESTIGATIONS

2.2.1 CT brain– with significant headaches or neurological signs

2.2.2 Needle biopsy - when bronchoscopy and biopsy negative or for peripheral lesion. It is recommended that the decision to proceed to a needle biopsy is made at a multi-disciplinary team meeting, as the investigation may be obviated if resection would be performed anyway or if histological confirmation is deemed inappropriate.

2.2.3 US upper abdomen

Indications:

- Abnormal liver function
- Clinically abnormal liver
- As part of staging for small cell lung cancer (if liver not already staged by CT scan)

2.2.4 Bone scan

Indications:

- i. Bony pain
- ii. Raised alkaline phosphatase and a normal liver scan

2.2.5 MRI scan

Possible indications:

- i. Possible bony metastases with a normal bone scan
- ii. Chest wall invasion
- iii. Brain if high suspicion of cerebral metastatic disease and CT negative.
- iv. To further assess adrenal and liver masses
- v. To further assess mediastinal invasion by tumour
- vi. Pancoast tumour (see appendix x)

2.2.6 Mediastinoscopy

Indications:

- i. Uncertainty as to whether there is malignant change in mediastinal lymph nodes when likely to affect treatment decision (staging)

- ii. When this is the best route for a tissue diagnosis

2.2.7 Pleural aspiration/biopsy

- Indications:
- i. To obtain cytology/histology (diagnosis)
 - ii. If positive pleural fluid cytology would preclude radical therapy (staging)

2.2.8 Lymph node aspirate or biopsy

- Indications:
- i. palpable enlarged lymph nodes

2.2.9 Biopsy of possible metastases

e.g. Liver, adrenal gland, skin, bone etc.

2.2.10 FDG-PET scanning

- Indications: Patients in whom resectability has not been ruled out using conventional staging, as above.

Note. PET scanning is not yet routinely available for NHS patients but is becoming the standard of care in the pre-surgical assessment of lung cancer patients. Considerable local experience has been obtained using a combined CT/PET scanner as a research tool and the Network is enthusiastic to develop this as a routine part of pre-operative staging. This will have funding implications, but is now technically feasible. If the mediastinum appears clear mediastinoscopy can be obviated. If there is evidence of mediastinal disease confirmation that this is due to malignancy is still required, as there is a false positive rate.

3. CLINICAL TRIALS

- 3.1** Accreditation requires recruitment of a minimum of 7.5% of lung cancer patients into clinical trials. In principle the group supports trials, and where suitable trials exist patients should preferentially receive treatment within the context of a clinical trial.
- 3.2** Laminated trial summaries are being distributed to each Lung Cancer MDT and Lung Cancer Clinics. These are intended to be used to check eligibility criteria and to complement the Research Nurse input to individual MDTs.

4. THORACIC SURGERY

4.1 SERVICE PROVISION

Mr Graham Cooper, Mr David Hopkinson, Mr Gaetano Rocco, and Mr Roger Vaughan provide the Thoracic Surgery Service in the Cardiothoracic Department, Chesterman Wing, Northern General Hospital, Sheffield.

4.2 ACCESS TO THE SERVICE

Patients should be referred for surgery at the local MDT meeting, and only outside this forum in exceptional circumstances.

4.3 PATIENTS TO REFER

As Surgery provides the best outcome for early stage non-small cell lung cancer (Stages I and II), such patients should be considered for surgical resection unless it is clear that they are inoperable. Certain subgroups of stage IIIa (T₃N₁) should be considered for surgery on an individual patient basis.

Comment [t1]: Would probably recommend primary chemotherapy for such patients with this clinical stage.

- 4.3.1 Patients with a probable peripheral lung cancer where histology has not been obtained.
- 4.3.2 Patients where surgical biopsy is needed to establish the diagnosis.
- 4.3.3 Patients who require a mediastinoscopy to assess the stage of their tumour.
- 4.3.4 Patients downstaged by neoadjuvant treatment in the context of a clinical trial, after discussion at an MDT meeting.

4.4 PRE-REFERRAL WORK UP

(a) Operability

DETERMINING WHETHER THE SURVIVAL ADVANTAGE AFTER RESECTION OUTWEIGHTS OPERATIVE MORTALITY AND MORBIDITY

Age	Age is not a contra-indication
Cardiac status	No clinical evidence of cardiac morbidity. Where there is history of MI or symptomatic angina, an exercise test should be undertaken. If doubt persists referral to a cardiologist for consideration of angiography should be undertaken.
Respiratory Status	No further respiratory assessment is necessary if: <ul style="list-style-type: none">• FEV₁ >1.5 litres / >40% predicted - lobectomy• FEV₁ >2.0 litres / > 40% predicted – pneumonectomy unless there is unexplained breathlessness. However, if the surgeon to whom a unit refers does require this routinely to be obtained then local policy may be modified accordingly. The strict application of these values can be modified when there is an endobronchial obstruction present. Otherwise: <ul style="list-style-type: none">• arrange a transfer factor (a DL_{CO} <40% predicted indicates high risk)

Comment [t2]: Should we specify: PS<3??

- consider a differential perfusion scan and/or VO₂ max measurement (see BTS fitness for surgery guidelines).

(b) Resectability

DETERMINING WHETHER REMOVAL OF MACROSCOPICALLY VISIBLE TUMOUR CAN BE ACHIEVED IN PART (PALLIATION) OR TOTALLY (RESECTION FOR CURE)

Site of Tumour At Bronchoscopy, tumour appears resectable according to procedure required

CT staging (cTNM) Stage I, II and selected stage IIIa patients should be discussed with a surgeon

(Formal TNM and Lung Cancer staging are described in Appendix 2)

5. RADIO THERAPY

5.1 SERVICE PROVISION

The radiotherapy service is provided by Clinical Oncologists working at Weston Park Hospital as follows:

RHH	Dr Fisher
NGH	Dr Fisher
DRI (+Bassetlaw)	Dr Hatton (Dr Dunn)
RDGH	Dr Hatton
CNDRH	Dr Kirkbride
BDGH	Drs Fisher, Kirkbride and Hatton (interim arrangement – via Dr Fisher's secretary)

5.2 ACCESS THE SERVICE

Patients should be referred for radiotherapy at the local MDT meeting, and only outside this forum in exceptional circumstances.

5.3.1 Non Small Cell Lung Cancer

5.3.1.1 Radical radiotherapy

Patient characteristics:

- Performance status 0 - 2,
- No excessive weight loss (< 10%),
- FEV₁ should be > 1 litre or > 50% predicted,
- Able to tolerate treatment position.

Tumour characteristics:

- Maximum tumour size 5cm,
- No evidence of mediastinal nodes on CT scanning,
- No evidence of metastatic disease

Peripheral T1/T2 N0 tumours where irradiation of the mediastinum, as per the CHART protocol, would increase the field size considerably should be treated with conventional radical radiotherapy.

Lack of pathological confirmation should not preclude patients with a clear radiological diagnosis from treatment.

5.3.1.2 CHART

Squamous carcinomas should receive preference,
Central tumours that can be encompassed within maximum permitted field sizes,
N1 and even N2 disease may also be suitable provided maximum volumes not exceeded.

5.3.1.3 Palliative Radiotherapy

Indications for Palliative Radiotherapy

Emergency Treatment

N.B. All can be treated with alternative modalities.

Spinal cord compression (surgery)

Superior Vena Cava Obstruction (stent, ?chemo)

Stridor (stent)

Massive Haemoptysis

Definite Indications

Haemoptysis

Chest Pain

Pain from bone metastases

Possible Indications

Dyspnoea where this is due to bronchial obstruction by tumour

Cough

Brain metastases

Nodal masses and skin deposits

No indication

Dyspnoea due to lymphangitis, parenchymal metastases or pleural effusion

Post-thoracotomy Pain

17 Gy in 2# one week apart should be considered the standard regimen.

10 Gy in a single # should be given to patients of poor performance status (> 2), patients with metastatic disease and those who find it difficult to tolerate the treatment position.

High dose palliation, 36 Gy in 12#, should be reserved for patients with good performance status (0 - 2), without excessive weight loss, with no evidence of metastatic disease.

5.3.1.4. Post-operative radiotherapy

The evidence base for post-operative radiotherapy and chemotherapy for non-small cell lung cancer is very weak. Patients with residual disease (macroscopic or microscopic) should be considered for post-operative radiotherapy.

(ref. Burdett et al. Post-operative radiotherapy in non-small cell lung cancer: systematic review and meta-analysis of individual patient data from nine randomised controlled trials. *Lancet* 1998; **352**: 257-263).

Patients with N2 disease should have individual decisions depending on extent of disease, performance status, lung function and comorbid medical conditions. The morbidity of post-operative radiotherapy can be considerable.

Patients undergoing surgery for Pancoasts tumours who did not receive neoadjuvant radiotherapy should normally be referred for PORT, as local control is important in this group of patients. Other en bloc chest wall resections should have individual decisions depending on extent of disease, performance status, lung function and comorbid medical conditions.

Any patient being considered for PORT should have spirometry performed prior to discharge. If FEV1 <1 litre then formal lung function tests should be repeated prior to discussion at MDT. Radiotherapy should start within 8 to 12 weeks of surgery.

The radiotherapy volume should include the bronchial stump, mediastinal nodes and both lung hila. Patients should be CT planned and DVHs produced. The cord should not receive more than 40 Gy. See comments re volumes of lung which can be treated to 20 Gy or above but remember the patient has already had a reduction in lung function due to surgery. It may be necessary to use a 2 phase technique to avoid excessive lung doses if a pneumonectomy has not been performed.

The prescribed dose is 45 Gy in 20# to 100%.

5.3.2 Small cell lung cancer

5.3.2.1 Thoracic Consolidation

Thoracic radiotherapy should be offered to patients with:
limited disease,
good performance status (0 - 2),
adequate lung function ($FEV_1 > 1$ litre or $> 50\%$ predicted),
complete remission or good partial remission following chemotherapy.

5.3.2.2 Prophylactic Cranial Irradiation

Prophylactic cranial irradiation should be offered to patients with:
good performance status (0 - 2),
limited disease,
in complete remission after chemotherapy.

PCI should also be considered for good prognosis patients (Manchester Score 1) with extensive disease in complete remission following chemotherapy.

6. CHEMOTHERAPY

6.1 SERVICE PROVISION

RHH	Professor Woll and Dr Fisher
NGH	Professor Woll and Dr Fisher
DRI (+Bassetlaw)	Dr Hatton (Dr Dunn)
RDGH	Dr Hatton
CNDRH	Dr Kirkbride
BDGH	Drs Fisher, Kirkbride and Hatton (interim arrangement – via Dr Fisher's secretary), Professor Woll

6.2 ACCESS TO THE SERVICE

Patients should be referred for chemotherapy at the local MDT meeting, and only outside this forum in exceptional circumstances.

6.3 PATIENTS TO REFER

- i. All patients with small cell lung cancer should be considered for chemotherapy via the MDT.
- ii. Chemotherapy for non-small cell lung cancer (NSCLC) should be considered as an option in patients who are unsuitable for, or considered unlikely to respond to an attempt at curative treatment (NICE guidance)

6.4 PRE-REFERRAL WORK-UP

6.4.1 Small Cell Lung Cancer

6.4.1.1 Staging Small Cell Lung Cancer

(ref. Stahel RA et al. Staging and prognostic factors in small cell lung cancer: a consensus report. *Lung Cancer* 1989; 5: 119-126).

Patients are staged as:

LIMITED DISEASE - tumour confined to one hemithorax, including evidence of pleural effusion, involvement of the supraclavicular lymph nodes (ipsilateral and/or contralateral) and mediastinal lymph nodes

EXTENSIVE DISEASE - evidence of tumour beyond the above

Deleted: ¶

6.5 TREATMENT OPTIONS

Deleted: ¶

Manchester score

(ref.: Cerny T et al. Pre-treatment prognostic factors and scoring system in 407 small cell lung cancer patients. *Int J Cancer* 1987;39:146-149).

Serum Sodium	<normal
Performance status	WHO PS> 2 (Karnofsky <60)
Extensive stage disease	
LDH	>normal
Serum Alkaline Phosphatase	> 1.5 x normal

Any positive in this series scores 1 point

Score 0 – 1	Good prognosis
Score 2 – 3	Intermediate prognosis
Score 4 – 5	Poor prognosis

Treatment regimes are tailored to the prognostic score.

6.4.2 Non Small Cell Lung Cancer chemotherapy indications :

Neoadjuvant and adjuvant treatment in context of clinical trials

Combined modality treatment (surgery / radiotherapy) in context of clinical trials

Palliative – locally advanced disease with symptoms despite radiotherapy or metastatic disease in good performance status patients

7. COMMUNICATION AND PALLIATIVE CARE

7.1 BACKGROUND

Palliative medicine and nursing specialists are now incorporated in most of North Trent cancer MDTs, but the way that they receive patients from other clinicians may vary. This section of the guideline is a start to identify sensible and feasible criteria, or 'triggers', to enable more prompt and appropriate referral for patients to palliative care services via cancer MDTs. These referral guidelines are concerned primarily with the interface between 'basic' and 'specialised' palliative care, i.e the transfer of patients from physicians, surgeons and oncologists to members of specialist palliative care teams who are available to each North Trent cancer MDT.

The Cancer Standards indicate that all MDTs should include a representative from local specialist palliative care services, which could be from medicine or nursing. Ideally this should be strengthened with attendance of both a palliative medicine physician (consultant level or specialist registrar) and a specialist nurse at each MDT. Unfortunately for many units this is not available, and as a result much of the recommendations below are aspirational. It is hoped however that this document may define a model of care that may help units to make the case for increased palliative medicine input.

When no members of the palliative care team are present at an MDT then there should be a clear means of contacting them regarding potential new patients or current patients who need review. The decision to make a referral via the MDT should be recorded in the meeting minutes, as for any other referral.

As well as a palliative care physician and nurse, for many patients it may be appropriate to see other members of the broader palliative care multiprofessional team, e.g. physiotherapy, OT, psychology, social work, dietetics, chaplaincy, speech and language therapy etc. We recommend that access to the broader palliative care should be the responsibility of the palliative care members of the MDT, and that a list is maintained of named individuals who can be accessed by each MDT.

7.2 TIMING OF REFERRAL

Many cancer patients present symptomatically and even when asymptomatic have a high risk of anxiety and other psychosocial distress. It is important therefore that patients are considered for referral to specialist palliative care at the earliest stage, which may be even before a definite diagnosis is made. This is especially relevant if patients present with metastatic disease; are elderly; or very young. It is emphasized that palliative care should no longer be seen as the pathway for metastatic or terminally ill patients only. For all patients, the need for palliative care referral should be considered at all MDT meetings when their progress is reviewed, and in between meetings if a clinician becomes aware of a new problem, eg emergency admission for symptom control.

7.3 SCREENING FOR PALLIATIVE CARE NEEDS

To screen for referral to the palliative care team, it is recommended that a standardised quality of life questionnaire (e.g. EORTC QLQ-C30) be presented to patients as they arrive at the clinic, for completion before seeing the clinician. The form can then be used as a

checklist for the clinician during the consultation, in which it provides patient-generated scores 'in real time' for many of the questions that would normally be asked anyway, and also for others which are often overlooked in busy clinics. Recent studies have indicated that this approach can increase the chance of significant problems being picked up and discussed during consultations, and leads to higher patient satisfaction. **They do not add to clinic waiting or consultation time.**

Using a standardised palliative care needs checklist in MDT meetings would not only regularise the means of referral to palliative care but also enhance the quality of consultations for all patients and clinicians. Appendix A gives a proposed sample screening checklist for cancer patients attending North Trent MDTs. It is based on the EORTC QLQ-C30, an internationally recognised quality of life instrument. Research at Leeds has shown that it is well received by patients and provides useful practical information for clinicians to use during the consultation. In Leeds various completion techniques have been evaluated, including direct computer entry by patients. We propose to use the EORTC QLQ-C30 initially as the screening checklist for symptoms, psychological, social and financial problems for patients attending North Trent MDTs. This proposal will be reviewed after a test period, as other potentially suitable checklists are also available.

Patients who are unable to complete the checklist should be helped to do this by a clinic staff member. This could be the clinic nurse, the palliative care nurse, or the clinician seeing the patient during the consultation. Translations are available of the EORTC QLQ-C30 in all major languages: the scoring system is the same for all so that the scores can be read off even if the questions are not printed in English. If it is inappropriate for the patient to complete a questionnaire, even with help, then we recommend that the clinician seeing the patient should use the checklist as a prompt for asking – at least - the specific questions relating to the topics listed below.

7.3.1 How will the checklist help to trigger referrals to palliative care?

Patients with uncontrolled symptoms, or symptoms which can only be controlled with unacceptable toxicity to the patient, should be referred. The following lists the usual physical symptoms which arise in cancer patients, at any stage of the disease –

- Pain
- Dyspnoea
- Nausea/vomiting
- Constipation/diarrhoea
- Anorexia/cachexia
- Fatigue

In addition, psychological distress (in particular anxiety and depression) is prevalent from the time of diagnosis, and may reach the point where intervention is required. Social and financial difficulties may also need specialist interventions. These could be activated via the community-based services (see above) or via the MDT palliative care staff.

Using the EORTC QLQ-C30 as a checklist, we propose that the scores given in 'real time' should be used to activate referral, unless the MDT member seeing the patient can readily improve his/her symptoms.

- Using the 4-point verbal scale (not at all; a little; quite a bit; a lot), patients who report pain or other symptoms as *'quite a bit'*, *should be discussed* with a palliative care specialist. As a result of the discussion, the following could happen –
 - § Patient is given advice and GP advised to initiate therapy
 - § Patient is seen in same clinic by palliative care specialist, or brought back within two weeks to another clinic.
- Patients who score *'a lot'*, *should be seen promptly* by a palliative care physician or nurse unless symptom improvement can be rapidly effected. Ideally this should be in the same clinic visit, or if that is not possible, then the patient should be initiated on appropriate therapy and brought back within one week to see the palliative care specialist. Appropriate therapy should be identified from the current local palliative care formulary (or the network formulary, which is due to be produced in 2003).
- Patients who have persisting symptoms at levels of *'a lot'* even after being seen by the MDT palliative care specialist, should be discussed at the *local palliative care MDT* meeting. If appropriate, the patient could then be seen by relevant members of the broader palliative care team (see above).

7.3.2 Storage of checklist forms

The checklists completed by patients (or by clinicians either on behalf of patients or as an interview prompt) could be valuable as audit material for the MDT's handling of palliative care issues. It will be impractical to insert all of these into the patient's notes. It is recommended that all completed checklists (or unfilled ones with the reason for non-completion) are stored confidentially at a central point for each MDT. Ideally the forms should be kept by the MDT coordinator and made available to anybody conducting team audits or individual patient reviews.

7.4. REFERRAL TO COMMUNITY-BASED PALLIATIVE CARE SERVICES

In many cases the need will arise during a clinic visit, for the patient to be referred to the local community-based palliative care services. This could be at a 'basic' level, e.g. GP or district nurse; or at 'specialised' level, local hospice community team. Ideally this need should be discussed during the MDT meeting, but it may only surface once the patient has been seen in the clinic. It is reasonable for any MDT member to make a referral to community-based palliative care. However, it is recommended that if such a referral is made by a MDT physician, surgeon or oncologist, then the specialist palliative care team members of that MDT should be informed (either by direct contact or copy letter). This would ensure continuity of care for palliative care needs between hospital and community – especially if hospital-based palliative care staff are already providing an outreach service themselves - and will facilitate appropriate information flow. Furthermore, any referrals to community-based palliative care should be recorded in the next MDT minutes and entered into the patient's database.

7.4 INFORMATION PROVIDING

All cancer patients (and those being investigated for suspected cancer) are now required to have access to appropriate information. This usually takes the form of written material (locally produced leaflets, nationally produced booklets such as from CancerBACUP). Increasingly, information is being made available via the internet, from national and

overseas sources (DIPEX, NCI); and in the North Trent Cancer Network website. For example, patient information leaflets and other details for current North Trent clinical trials are being posted on the internet. It is recommended that each MDT should produce its own leaflet with names and contact details for each of members; this should be made available to all new patients, ideally via the letter of first appointment.

A clinic nursing staff member (clinic nurse or palliative care nurse) should have responsibility for ensuring the constant availability of patient and carer information. This should be minimally a notice-board with flyers and posters about information services; and preferably a wall-rack of local and national leaflets and booklets. Ideally each cancer clinic in North Trent should have an internet access point conveniently and privately situated. This internet point should have PIES¹ installed and a staff member should be trained in helping patients to access the PIES services.

7.5 **COORDINATING CLINICIAN**

As patients in cancer MDTs are discussed by several professionals, and may be under the care of more than one at any time, there is scope for confusion and crossed wires of communication, by both patients and staff (and especially with respect to the primary-secondary care interface). The MDT discussion should make it clear who will see the patient at each clinic visit. One solution is that the MDT should declare who at any moment is the current 'coordinating clinician' for the patient, and this should be added to the patient's database. If the coordinating clinician hands the care over to another member of the MDT in between visits, then this should be documented at the next visit and entered in the database. The current coordinating clinician should also be identified in each clinic letter.

If it is decided during the MDT discussion, or later during the clinic consultation, to make a referral to palliative care, then there should be a handover from the physician, surgeon or oncologist to the relevant colleague. This often happens when the patient returns to the clinic after investigations, to hear the results. Ideally this handover should be by personal introduction during the clinic. If the reason for handover to palliative care is that investigations show advanced or progressive disease, then it is the duty of the investigating clinician to impart that news to the patient first. If the handover is done after the clinic visit, or in between visits, then it is the responsibility of the clinician handing over to inform the patient and the GP of the change.

Deleted: ¶

¹ PIES stands for *Personalised Information, Education and Support for cancer patients and carers*, and is a Macmillan funded development in North Trent carried out by the Academic Palliative Medicine Unit of the University of Sheffield. For details contact Hilde H Ahmedzai, PIES Project Manager, Trent Palliative Care Centre, 0114 262 0174 or h.h.ahmedzai@sheffield.ac.uk.

8. BREAKING OF BAD NEWS

The specific task of breaking bad news to patients and their carers involve important issues of communication, organisation, ethics, information and personal development. Good practice requires not only skill but also knowledge and attitudes that have been learned in a way which enables the clinician to evaluate and improve the performance of them and others.

Many sets of guidelines have been published, most have been developed in the context of cancer services. Although no industry standard is universally accepted, some principles have emerged as common to most guidelines. A consensus is emerging on the general principles of good communication of which breaking bad news is one of the more advanced aspects.

The Department of Health recognises the need for all professionals who have contact with patients to undergo training in advanced communication skills. Ongoing supervision and continued professional development also have a place in maintaining performance. Other prerequisites to good practice include adequate physical surroundings, sufficient time for consultation and the correct institutional culture of openness, honesty and responsiveness to individual patients' needs. Adequate documentation of bad news consultations with information on what has been communicated should also be shared with other professionals involved in the care of the patient.

Among the frameworks for teaching the skills necessary to break bad news is the widely used protocol; SPIKES:

- Setting
- Perception
- Invitation
- Knowledge
- Exploration
- Strategy

The following guidelines use the SPIKES framework and include considerations from other literature under the relevant heading.

Setting

- Surroundings should be private and quiet with adequate uninterrupted time set aside commensurate with the complexity and gravity of the information to be shared.
- Professionals should be prepared with appropriate training in communication and specific information for the task which includes not only the test result but what that means for the patient and their management.
- Patients should be prepared with an understanding of the purpose of the consultation for example to hear the results of an x-ray, biopsy, and other test or to hear the conclusions following discussions with other specialists. Patients should then be in a position to decide who they wish to have present – partner, carer or other interested family member or friend.

Perception

- Patients' perception of what has happened so far has an impact on their ability to interpret information. Reviewing and summarising the relevant medical problem and concerns associated with it will enable the professional to explain new information in the correct context and at a level of complexity commensurate with the patients and carers current understanding and preference for the extent of information.
- The account will also elucidate any gaps in understanding and misconceptions as well as patients' legitimate expectations of what information they are about to hear.

Invitation

- Unlike other, more acute situations, such as the sudden death of a partner or child, where bad news must be delivered without delay, information concerning diagnosis or prognosis should only be given with the consent of the patient. This may take the form of a patient asking a direct question, their request to know more or a shared understanding of the purpose of the consultation.
- It is impossible for a professional to be aware of all the background, which determines the coping style, information preferences and understanding.
- Ensuring that the patient has control over the rate and extent of the information flow enables the patient to use denial, allow time for assimilation or recruit effective support.

Note here that unlike in the acute situation the use of a formal warning shot "I have some very bad news for you" or similar is not appropriate since it is the opposite process from building on what is already understood. Neither is inviting the patient to guess the result before it is known since confirmation of worst fears or dashing their hopes are not processes where patients are in control.

Knowledge

- Explanation of what the professional knows, starting from what the patient knows should be done in simple steps without the use of jargon.
- Excessive information concerning fine detail or numerous possible outcomes should be avoided unless there is a crucial point of concern. In contrast it is essential that the patient understands the broad issues around their situation and no major consideration is left without the offer of explanation.
- When a patient indicates that they have heard enough, any further information should be offered but not given unless the patient wishes to know more.
- Checking patients' understanding and screening for more questions needs to be done as part of the negotiation of information flow as well as to inform future consultations.

Exploration

- Eliciting patients' concerns around the information received allows the professional to assess how the news is being assimilated.
- Understanding how the news fits into the context of the patients' illness, life, family and beliefs will allow the appropriate supportive care to be directed to the patient.
- The ventilation of feelings may be encouraged by expressions of empathy. This is done when the professional indicates an understanding of the connection between the cause or source of the emotion and the patient's apparent feelings. In this way patients' feelings may be legitimised and they gain the support of a professional experienced in dealing with the situation they find themselves in.

Strategy

- Summarising the current state of shared knowledge may be followed by discussion of options for further investigation, treatment, referral or review.
- An indication of whom the professional will communicate the latest news to will allow the patient to form realistic expectations of the source of further information and support.
- The strategy needs to include specific plans for what happens next in terms of treatment or review and who to contact if the patient needs to consult before the next meeting.
- If there is more information which the patient indicates they do not wish to discuss at the time, permission should be sought to have further discussions with the main carer.
- All of the above should be documented in the clinical notes using short verbatim quotes as much as possible.
- Unless there are specific reasons to the contrary, all professionals concerned should be informed in writing of the consultation including the GP, oncologist, surgeon, investigating physician, palliative physician, clinical nurse specialist, district nurse and other therapists.

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APPENDIX ONE

MEMBERS OF THE LUNG CANCER EXECUTIVE FOR NORTH TRENT (LuCENT)

Chairman:

Dr T Rogers Consultant Respiratory Physician, Doncaster Royal Infirmary

Deputy Chairman:

Dr J Hill Consultant Respiratory Physician, Northern General Hospital

Participants:

Prof S Ahmedzai Consultant in Palliative Medicine, Royal Hallamshire Hospital
Anne Clegg Palliative Care Nurse
Dr S Crooks Consultant Respiratory Physician, Chesterfield & North Derbyshire
Royal Hospital
Dr T Fisher Consultant Clinical Oncologist, Weston Park Hospital
Dr M Hatton Consultant Clinical Oncologist, Weston Park Hospital
Dr R Lawson Consultant Respiratory Physician, Royal Hallamshire Hospital
Dr N Qureshi Consultant Respiratory Physician, Rotherham General Hospital
Mr G. Rocco Consultant Thoracic Surgeon, Northern General Hospital
Dr P Stannard Consultant Radiologist, Doncaster Royal Infirmary
Dr K Suvama Consultant Histopathologist, Northern General Hospital
Mr R Vaughan Consultant Thoracic Surgeon, Northern General Hospital
Dr I Wahedna Consultant Respiratory Physician, Barnsley District General Hospital
Prof. P Woll Professor of Oncology, Weston Park Hospital

Input from:

Mrs I Ainsworth Trent Cancer Registry
Susan Murrow North Trent Network Audit Co-ordinator
Mr P Needham Trent Cancer Registry

APPENDIX 2

Staging of lung cancer using TNM of Lung Cancer Staging

(ref. Clifton F, Mountain M D. Revisions in the Internal system for staging lung cancer. Chest 1997; 111: 1711-1717).

T = tumour size

N = nodal involvement

M = metastasis

Stage Ia	T1 N0, M0
Stage Ib	T2 N0 M0
Stage IIa	T1 N1, M0
Stage IIb	T2 N1 M0 – T3 N0 M0
Stage IIIa	T1 N2 M0 – T2 N2 M0 – T3 N1 M0 – T3 N2 M0
Stage IIIb	T1 N3, M0 – T2 N3 M0 – T3 N3 M0 – T4 N 0-3 M0
Stage IV	any T, any N, M1

T0 No primary tumour detected

TIS Carcinoma *in situ*

T1 Tumour measuring 3 cm or less in its largest dimension surrounded by lung or visceral pleura
or - endobronchial tumour, proximal to one lobar bronchus

T2 Tumour measuring more than 3 cm in its greatest dimension
or - extension to the visceral pleura
or - atelectasis or obstructive pneumopathy of less than one lung
or - lobar endobronchial tumour or tumour of one principal bronchus at more than 2 cm from the carina

T3 Tumour of the apex
or - endobronchial tumour of one principal bronchus at less than 2 cm from the carina but not invading it
or - atelectasis
or - tumour of any size with direct extension to the adjacent structures
- to the chest wall
- to the mediastinal pleura
- to the pericardium parietal layer
- to the diaphragm
- to the mediastinal fat or the phrenic nerve

T4 Macroscopic or histological extension:
- to the mediastinum
or - to the heart
or - to the large vessels
or - to the trachea or compression of the trachea
or - to the oesophagus or its compression
or - carina invasion
or - to a vertebral body
or - malignant pleural or pericardial effusion
or - recurrent nerve involvement

- or - invasion of the homolateral visceral or parietal pleura which cannot be a result of direct spread of the tumour
- or - multiple neoplastic nodules in the same lobe of the lung

- N0 No metastases to the regional lymph nodes
- N1 Metastases:
 - to hilar lymph nodes
 - or - to the peribronchial homolateral nodes:
 - interlobar
 - lobar
 - segmental
 - or - to both (including direct extension)
- N2 Metastases to the homolateral mediastinal lymph nodes
 - higher mediastinal
 - or - upper paratracheal
 - or - pre and retrotracheal
 - or - lower paratracheal (including azygous lymph nodes)
 - or - aortic
 - or - sub-aortic (aortic window)
 - or - para-aortic
 - or - para-oesophageal
 - or - pulmonary ligament
 - or - sub-carinal
- N3 Metastases to the contralateral mediastinal lymph nodes
 - higher mediastinal
 - or - upper paratracheal
 - or - pre and retrotracheal
 - or - lower paratracheal
 - or - aortic
 - or - sub-aortic (aortic window)
 - or - para-aortic
 - or - para-oesophageal
 - or - pulmonary ligament

Metastases to the homolateral or contralateral scalene or sub-clavicular lymph nodes

Metastases to the contralateral hilar lymph nodes
- M0 No distant metastases
- M1 Metastases present
It should be noted that if multiple neoplastic nodules exist in the same lobe of the lung, these tumours will be classified as T4, but multiple nodules in several lobes will mean an M1 classification

APPENDIX 3

Management of Superior Vena Cava Obstruction (SVCO) complicating lung cancer

Introduction

This was previously regarded as an acute medical emergency, but it is now appreciated that there is time for adequate diagnostic evaluation prior to treatment. SVCO is not an independent prognostic factor in lung cancer.

Recognition

The clinical features include:

- swelling of the face (including conjunctiva), neck and arms
- breathlessness in 50-80%
- chest pain, cough, hoarseness
- dizziness, syncope, lethargy, headache, dysphagia
- usually acute in onset

Investigation

Imaging: CT scanning, venography/superior vena cavogram are the commonest techniques for confirmation of the diagnosis.

Investigations should be undertaken to establish a diagnosis with sufficient precision for the correct treatment decision to be made, which usually requires a tissue diagnosis.

Treatment

Symptoms are improved by sitting the patient up, and giving supplemental oxygen. The role of steroids is unproven but clinical experience supports their efficacy: suggested dose is dexamethasone 4 mg q.d.s. with rapid tapering as control is obtained. Full-dose, unfractionated heparin is also recommended prior to endovascular treatment (see below) and may have a more general role, although this is unproven.

Whilst many patients can be stabilised in this way to allow specific anti-cancer treatment, thrombolytic therapy and stenting have benefits in selected patients. Such endovascular treatment is the treatment of choice in recurrence after radiotherapy/chemotherapy and may also be required in patients with distressing symptoms, especially when delay is anticipated prior to histological diagnosis, for example when mediastinoscopy is required.

Radiotherapy and Chemotherapy

Radiotherapy (CHART, radical or palliative) remains the preferred treatment for NSCLC. 17 Gy in 2 Fractions is considered standard. Supraclavicular fossa treatment may reduce local relapse rate.

In SCLC patients symptomatic response rates to chemotherapy occur in 70 - 90 %, and objective response rates in 30 - 70 %. It should be given according to the Manchester score in the usual way. Radiotherapy is also highly effective in SCLC, associated with symptomatic response rates of 70 - 90%.

Endovascular Management of SVCO

Stenosis is technically easier, quicker and safer to relieve than thrombotic occlusion, which may be suggested by a more rapid deterioration. Infusion of unfractionated heparin should

be started as soon as possible to prevent thrombosis of the stenosis. Bilateral arm venography via basilic veins is standard, although stents are usually placed from the groin. The objective of stenting is to allow drainage of at least 1 internal jugular vein; bilateral stenting may be considered if there is a good prognosis.

Low dose thrombolysis with mechanical thrombectomy is required to clear clot prior to stenting (e.g. rtPA 0.5 mg in 10 ml N saline per hour infused via catheters from the arms, with the tips in the thrombus, 500 IU heparin per hour is usually infused in combination to prevent pericatheter thrombosis). Repeat venography should be performed, catheters repositioned as necessary, and lysis stopped once there is rapid forward flow. A stent should then be placed to open the underlying stenosis.

APPENDIX 4

Management of Pancoast tumour

Differential Diagnosis

Neoplasms: Primary bronchogenic, metastatic, other primary thoracic, hematological.

Infectious processes: Bacterial, fungal, TB, parasitic.

Miscellaneous: Cervical rib, pulmonary amyloidoma.

Definitions

Pancoast tumour: neoplasm localised in the superior sulcus of the lung; which may extend to neighbouring structures, such as chest wall (T3).

Pancoast syndrome: signs and symptoms resulting from infiltration of neurovascular bundle at the thoracic inlet, including the sympathetic chain, and the vertebrae (T4). Patients usually complain of steady, severe, and unrelenting shoulder and arm pain (C8-T1), and weakness of the intrinsic muscles of the hand. On examination there is often a Horner's syndrome (miosis, ptosis and anhidrosis).

Imaging

1. CXR - usual initial investigation. The commonest appearances are of an apical density, usually with an ill-defined inferior border. The presence of rib destruction is very indicative of a malignant process, as is elevation of the ipsilateral hemidiaphragm, which is suggestive of phrenic nerve palsy.
2. CT chest scan identifies the soft tissue mass both within and outside the thorax and are sensitive for looking at bone involvement particularly rib destruction. A CT scan also helps to differentiate from other pathologies e.g. tumours arising from the neck extending inferiorly, adenopathy from lymphoma and infection within the lung fields.
3. MRI chest scan has the benefit of being multi-planar and giving very good soft tissue differentiation. An MRI scan is able to assess soft tissue involvement particularly the brachial plexus better than CT but is less sensitive to bony involvement particularly of the rib and the spine. If surgical resection is contemplated MRI allows for more accurate assessment of positioning of neural tissue and vessels in relation to the tumour. Intraspinial involvement, particularly involvement of the cord, is best assessed by MRI.
4. Isotope bone scans are also used as a secondary investigative tool to assess if there is any bony involvement particularly in the ribs and the spine.
5. Ultrasound guided biopsy is the safest method of obtaining a tissue diagnosis as it allows clear visualisation of vessels and other important structures in the neck and upper thorax at the time of biopsy.

Treatment

Recommendations - highly selected patients with superior sulcus tumours may be suitable for radical surgery, possibly in combination with other treatments - BTS Guidelines, Thorax 2001. There is no case for surgery in groups when mediastinal nodes are involved. The value of preoperative radiotherapy has never been examined in a randomised (or non-randomised) trial.

Surgical techniques

Theoretically, a T3 Pancoast should be approached through a posterior incision. When faced with a T4 tumour the surgeon should use the anterior approach, especially when vascular invasion is suspected.

Contraindications to surgery

M1 disease.
N2 / N3 disease.
Invasion of the brachial plexus above T1, involvement of radial/median nerves.
Invasion of the spinal canal.
Small cell lung cancer (relative).

Combined Modality Treatments

SWOG Trial 9416.

Eligibility Criteria

Pathologically proven NSCLC.
Mediastinal (N2), SCF (N3) & M1 disease ineligible.

Treatment Schedule

(a) Chemotherapy: 2 cycles Cisplatin & Etoposide
(b) Radiotherapy: •45Gy 25# to primary tumour & ipsilateral SCF.
(c) Surgery - Lobectomy or pneumonectomy 3 to 5 weeks following induction therapy. Areas of direct tumour extension into the chest wall or spine resected en bloc. 2 additional cycles of chemotherapy post resection.

Pathological response

-pCR	33.7%
-Minimal microscopic residual	31.3%
-Gross residual disease	34.9%

Substantial discrepancy between radiological and pathological responses.

Overall survival

Plateaus at approximately 55% 2 years after initial chemotherapy.
Overall survival for patients who had a complete resection: plateaus at approximately 70% 2 years postoperatively.

Conclusions from the study

Overall mortality only 4.5%.
"...is a feasible and well-tolerated regimen even when used across a broad range of institutions..."

“...this study effectively sets a new standard of care by virtue of the substantially better outcome achieved compared with recent surgical series reporting the results of radiation and resection without chemotherapy.”

CONCLUSION

This is a heterogeneous group of patients and therefore difficult to make firm recommendations for management. It is essential that specialist imaging and treatment options are discussed in the context of MDT meetings. Combined modality treatment should be considered for appropriate patients and, where possible, offered in the context of an ongoing clinical trial.

APPENDIX 5

Recommended Protocol For Staging Suspected Lung Cancer

Introduction

Following discussion with lead Radiologists at each of the cancer units it is clear that protocols vary significantly. This is at least in part related to differences in equipment. The technique recommended in "The Use of Computer Tomography in the Initial Investigation of Common Malignancies" (Council, The Royal College of Radiologists November 1994) is "8 – 10 mm contiguous sections are obtained from the lower neck to the inferior margin of the liver. The use of IV contrast medium, given as an extended bolus technique and fast scanning, are essential to assess the hilum and mediastinum". In the absence of a didactic statement from the RCR which supersedes this, I feel it is unreasonable to be too prescriptive in formulating a protocol. Clearly if audit shows particular protocols to be inadequate or unsatisfactory then revision will be necessary (vide infra).

Protocol

5 – 10 mm contiguous slices from lower neck/lung apex down to inferior margin of liver, using an extended bolus of intravenous contrast (eg 100 mls Optiray 300 at 3 mls per second).

2 phases;

- 1 Arterial phase mediastinum (approximately 30 seconds)**
- 2 Portal venous phase liver (approximately 65 seconds)**

Reporting

This is best performed from review of all the images on a work station which allows assessment on lung, mediastinal, liver and bony windows. It also allows for 3D reconstructions.

Hard Copy Imaging

Photograph

- 1 5 – 10 mm contiguous slices to demonstrate the lungs in their entirety (lung windows).
- 2 5 – 10 mm contiguous slices to demonstrate the whole of the chest and upper abdomen (soft tissue windows).

Assessment for Resectability

This should be made by the Radiologist and Thoracic Surgeon at the local MDT. If subsequently a patient comes under a different Surgeon for operation and there are questions regarding the staging scan then these queries should be referred initially to the relevant reporting Radiologist. It may be possible to produce further hard copy images to address these. If formal radiological review is required at the Northern General then perhaps consideration should be given to the use of "CD

hard copy" as a cheaper and a better alternative to numerous sheets of film. Very occasionally it may be necessary to repeat part or all of a staging examination. Any such problems encountered at the cancer centre should be documented with feedback to the relevant MDT. This information can then be audited and will inform any necessary modifications to the protocol.

APPENDIX 6

Contact With Other Agencies - Local Arrangements

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APPENDIX 7

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