**APPENDIX D: Additions to the Clinical Guidelines**

**Testicular Cancer Operational Policy for Guidelines –**
**Measures 11-1A-209g to 11-1A-211g**

East Midlands Cancer Network

# OPERATIONAL GUIDELINES FOR THE

# MANAGEMENT OF

# TESTICULAR TUMOURS

**EAST MIDLANDS SUPRANETWORK TESTIS MDT**


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**MDT Operational Policy in Hard Copy in File**

## CONTENTS

## 1.0 INTRODUCTION

The East Midlands Urological Cancer NSSG adopted as the Clinical Guideline for testicular cancer the EAU Guideline for Testicular Cancer.

This document is the operational guideline to localise this international guidance for the management of patients with testicular tumours. It is a template for best practice and an aid to health practitioners involved in management from primary care through referral, treatment and follow-up.

Testicular tumours are rare but important because they occur in the young. The peak incidence for teratoma is between 20 and 30 years and for seminoma between 30 and 40 years. Lymphoma of the testis occurs in the over 60s.

Testicular tumours have an excellent overall prognosis with a 95% cure rate.

Seminoma presents as disease apparently limited to the testis in over 80% of patients. Radiotherapy or adjuvant chemotherapy results in 5-year survival of 98%.

Teratoma of the testis presents with metastatic disease in over 50% of patients. Those without metastases have an excellent prognosis. Some cases are managed by surveillance alone and others are offered adjuvant chemotherapy.

Patients with metastases are grouped into prognostic categories using the International Germ Cell Consensus Classification (Appendix A). In summary:

56% of teratoma patients have a good prognosis (92% 5 year survival).
28% of teratoma patients have an intermediate prognosis (80% 5 year survival)
16% of teratoma patients have a poor prognosis (48% 5 year survival)

90% of seminoma patients have good prognosis (85% 5 year survival)
10% of seminoma patients have intermediate prognosis (72% 5 year survival)

Standard treatment is BEP chemotherapy (Bleomycin, Etoposide and Cisplatin).

Patients are usually referred after orchidectomy. The main indication for speed is patient anxiety and the need to establish a clear plan of management. **However, some patients have rapidly progressive tumour and can develop further metastases with a poor prognosis. They may also suffer from renal obstruction. Delay is therefore to be avoided in all cases.**

These patients will normally be referred by urologists. Rarely, direct from a general practitioner or Accident and Emergency department may be necessary.

A supra-network MDT covering the East of England incorporating Leicester, Nottingham, Derby, Coventry, Northampton, and Lincoln. A video-conference meeting is held weekly.

## 2.0 OUTCOME MEASURE SUMMARY

### 2.1 Referral

All patients with swelling in the testis should be referred urgently to the urologist.

All patients should be seen by the urologist within 2 weeks of referral.

### 2.2 Investigations

All appropriate investigations are carried out at the first appointment with the urologist.

### 2.3 Treatment

- **Pre-surgery**

Referral to the oncologist should be made prior to surgery in all patients where there is near certainty of a malignant diagnosis. In patients with extensive metastatic disease curative chemotherapy may be required prior to surgery.

Fertility should be considered prior to orchidectomy. Sperm cryopreservation is offered to all patients prior to their first treatment (surgery or chemotherapy).

- **Surgery**

Orchidectomy shall occur within 14 days of GP referral.

Orchidectomy is carried out via an inguinal incision with division of the spermatic cord at the internal inguinal ring.

Biopsy of the contralateral testis is considered in patients with a high suspicion of CIS (ITGCN), i.e. < 35 years and small testis < 12ml (Biopsy should be performed prior to chemo- or radiotherapy or 2 years after completion of treatment)

- **Post-surgery**

All staging investigations (i.e. histological review of tissue samples, CT scan chest, abdomen and pelvis and post-operative tumour makers) are organised by the urologist following orchidectomy.

- **Oncology Referral**

All patients should be referred to the designated oncologist at a regional Cancer Centre within 24 hours of surgery, unless referred prior to surgery.

All patients fulfilling the criteria for urgent referral (as detailed on page 10) should be referred directly to the Oncologist by telephone and should be seen within 24 hours of referral.

All **pathology** should be reported and films forwarded for review at the cancer centre by the multidisciplinary team within 1 week of orchidectomy.

All **radiology** CT scans should be reported and films forwarded for review at the cancer centre by the multidisciplinary team within 2 weeks of orchidectomy.

## 2.4 Multidisciplinary Team Working

All staging CT films must be discussed at the SMDT following review by the designated radiologist at the cancer centre within 3 weeks of orchidectomy.

All pathology must be discussed at the SMDT following review by the designated pathologist at the cancer centre within 3 weeks of orchidectomy.

All post-chemotherapy CT scans to assess suspected relapse and any complex cases where management is uncertain will be reviewed at the SMDT.

## 2.5 Oncology Management

All patients are seen with the results of the SMDT review by the designated oncologist at the regional Cancer centre within 4 weeks of orchidectomy.

Radiotherapy treatment should start within 31 days of decision to treat.

Chemotherapy should start within 2 weeks of decision to treat.

Urgent chemotherapy should start within 24 – 48 hours of referral to the oncologist.

Sperm cryopreservation should be discussed with all patients before chemotherapy (sperm may have been preserved prior to surgery).

All patients receive written information regarding the intended treatment and its potential side effects.

## 2.6 Management of Residual Masses after Chemotherapy – Teratoma

All teratoma patients with a residual mass greater than 1cm on post-chemotherapy CT scan should be referred to a specialist surgeon.

## 2.7 Follow up treatment

All patients are followed-up on protocol by the designated oncology team.

## 2.8 Patient Care

All patients will be offered written information on their disease and its implications, treatment options and potential side effects.

All patients should have a contact number for the key worker given at their first appointment with the oncology team.

## 2.9 Primary Care Team

GPs will be notified of the treatment plans within 5 working days of first consultation with the oncologist.

GPs will receive an evaluation of the patient's condition after each follow-up appointment, where changes in the patient's condition have been found or management decisions have been made.

## 3.0 MDT CORE MEMBERS / COVER ARRANGEMENTS

| | |
|---|---|
| **Oncology:** | Dr I Hennig (NUH)<br>Dr D Saunders (NUH)<br>Dr M Sokal (NUH) **Lead Oncologist** *covered by Dr I Hennig*<br>Dr Nicholson (UHL)<br>Dr C Elwell (NGH)<br>Dr P Chakraborti (Derby)<br>Dr G Faust (NGH)<br>Dr Sreenivasan (ULH)<br>Dr C Humber (Coventry)<br>Dr A Stockton (Coventry)<br>Dr P Camilleri (NGH) |
| **Radiology:** | Dr R O'Connor (NUH) **Lead Radiologist**<br>Dr Manhim<br>Dr G Turner ( Derby)<br>Dr L Moss (NGH)<br>Dr B Morgan (UHL) |
| **Pathology:** | Prof. Furness (UHL) **Lead Pathologist**<br>Dr G Hulman (NUH)<br>Dr A Molyneux (NGH)<br>Dr A Coup (ULH) |
| **Consultant Urological Surgeon (for retroperitoneal surgery):** | Mr J Lemberger (NUH) **MDT Lead / Lead Urological Surgeon** *covered by Mr R Kockelbergh*<br>Mr R Kocklebergh (UHL) |
| **Consultant Thoracic Surgeon:** | Mr John Duffy (NUH)<br>Mr D Waller (UHL) |
| **Clinical Nurse Specialist:** | Nicola Wilshaw (NUH) |
| **MDT Co-ordinator** | Karen Ashton (NUH)<br>Dawn Cave (UHL)<br>Bronwen Thomason (NGH)<br>Sam Thomas (Coventry) |
| **Other Members** | Dr Yvette Griffin<br>Dr N Mayer |

Core members of the MDT of their cover are expected to attend at least two-thirds of the weekly MDT meetings. Cover arrangements are in place to cover the absence of core members.

## 4.0 MDT CONTACT LIST

| | | |
|---|---|---|
| • NUH | Fax:<br>Telephone:<br>Bridge contact: | • 0115 840 5802<br>• Ext. 47518<br>• 0115 960 1042 |
| • ULH | Fax:<br>Lead Clinical Contact<br><br>Secretary: | • 01522 572213<br>• Dr Sreenivasan<br>• 07590366252<br>• Elaine Vine<br>• elaine.vine@ulh.nhs.uk<br>• 01522 512512 ext. 2215 |
| • UHL | Fax:<br>Tracker:<br><br>MDT Coordinator: | • 0116 2574733<br>• Shamira Rehmtulla<br>• 0116 2047905<br>• Dawn Cave<br>• dawn.cave@uhl-tr.nhs.uk<br>• 0116 2584735 |
| • Derby | Fax:<br>Telephone:<br>Secretary: | • 01332 254843<br>• 01332 347141 ext. 4843 or 4275<br>• Susan Feely<br>• susan.feely@derbyhospitals.nhs.uk<br>• 01332 254843 |
| • NGH | Fax:<br>Secretary:<br><br><br>MDT Team Leader: | • 01604 8404705<br>• Jill Lee<br>• jill.lee@ngh.nhs.uk<br>• 01604 634700 ext.5246<br>• Bronwen Thomason<br>• bronwen.thomason@ngh.nhs.uk<br>• 01604 634700 ext.4585 |
| • Coventry/Warwick | Lead Clinical Contact<br><br><br>MDT Facilitator | • Dr Caroline Humber<br>• caroline.humber@uhcw.nhs.uk<br>• 07961000186<br>• Sam Thomas<br>• sam.thomas@uhcw.nhs.uk<br>• 02476 965496 |

## 5.0 REFERRAL GUIDELINES

Tumours of the testis can be rapidly progressive. Delay in referral for urological opinion adversely affects the long-term outcome for patient and the intensity of treatment.

All patients suspected of having testicular malignancy should be urgently referred for urological assessment and seen within 2 weeks. (See Referral Guidelines for Suspected Cancer)

**Any swelling in the body of the testis in man aged 15 – 55 years is an indication for urgent referral and should be seen within 2 weeks**

**Common Presenting Symptoms Indicating Need for Referral to a Urologist**

1. 80 – 90% of patients will present with an enlarged testicle or lump in the testicle. This may be painless but 15% have pain. In 97% of patients a lump is present on examination. If this is clearly within the testis there is a high probability of cancer.

2. Newly developing varicocele or hydrocele.

3. A tender lump or enlargement persisting 10 days after starting antibiotics – (infection is an uncommon cause of testicular symptoms in men under 40 years old).

4. Other suspicious features include a dragging sensation or a recent history of trauma.

5. A history of testicular mal descent is present in 10% of patients. There is no association with vasectomy.

### 5.1 Urgent referral to Oncologist

Rarely, a patient will present with advanced metastatic disease, requiring emergency admission.

Findings may include:

- Backache, due to enlarged para-aortic nodes.
- Cough, breathlessness or haemoptysis, due to pulmonary metastases.
- Renal impairment due to ureteric obstruction from abdominal metastases.
- Gynaecomastia, due to production of excessive HCG by the tumour.
- Poor general condition associated with abnormality in testis.
- HCG>5000 or AFP>1000.
- Brain Metastases.

Such patients may already be under the care of a consultant surgeon or physician. They should be referred immediately by telephone to the Cancer Centre and seen within 24 hours. A pathological diagnosis is not a perquisite for referral in these circumstances.

## 6.0 INVESTIGATIONS

Pre-operative assessment of patients suspected of having testicular malignancy should include:

- AFP (alpha feta protein)
- □-HCG (beta human chorionic gonadotrophin)
- LDH (lactate dehydrogenase)
- Chest x-ray
- Palpitation of abdomen and neck for metastases
- Urgent ultrasound scan of the testis if required to confirm the diagnosis
- LFT's, U&E's & FBC

Investigations should be carried out at the patient's first appointment with the urological team.

If a diagnosis is certain pre-operatively on clinical grounds and lymphadenopathy is suspected, a CT scan of the chest, abdomen and pelvis should be requested pre-operatively and a referral to the oncologist should be initiated after discussion with the patient.

If patients present with signs of advanced metastatic disease, as above, CT scan of the chest, abdomen and pelvis will be required but may be best undertaken after patient transfer. CT of the brain will also usually be required.

## 7.0 SURGICAL MANAGEMENT

### 7.1 Pre-surgery

Preparation for surgery will include:

1. Informed consent
2. Investigations (as above)
3. Further investigations where appropriate (as above)

Histological diagnosis is not always necessary before referral to an oncologist as clinical near certainty can be achieved by ultrasound of the testis, tumour markers and physical examination. Orchidectomy can be undertaken after chemotherapy.

Fertility should be considered prior to orchidectomy. Sperm cryopreservation should be offered prior to surgery.

### 7.2 Surgery

Surgery has two aims – diagnostic and therapeutic:

1. Histological diagnosis
2. Excision of the primary tumour

Surgery should occur within 14 days of GP referral (or less).

The preferred orchidectomy approach involves an inguinal incision with division of the spermatic cord of the internal inguinal ring.

Orchidectomy via a scrotal incision is usually contra-indicated.

Biopsy of the contralateral testis should be considered for individuals at high risk of carcinoma in situ (CIS) (i.e. < 31 years and testicular volume < 12ml or with a history of mal descent) (Harland et al 1998). About 5% of men with testicular cancer have CIS of the contralateral testicle, CIS is thought to progress to invasive germ cell tumour (GCT) in 50% of these cases within 5 years and it is believed that in time **all** will develop invasive malignancy. This progression can be greater reduced by testicular radiotherapy (at the price of fertility). Even though the long-term prognosis of second testicular tumours is excellent however, second orchidectomy results in infertility and necessitates hormone replacement. (See Management of the Contralateral Testis, page 25).

**The option of testicular prosthesis should be discussed with all patients prior to orchidectomy.**

### 7.3 Post-surgery

Post-operative surgery investigations should be organised by the urologist. These investigations should include:

1. Histological review of tumour.

2. CT scan of the chest, abdomen and pelvis (if not already requested).
3. Post-operative AFP, HCG and LDH, performed weekly.

These investigations should be reported within two weeks of orchidectomy.

### 7.4 Oncology Referral

Although further treatment may not be required, all patients should be referred to the designated oncologist at the Cancer Centre by fax within 24 hours of surgery.

Results of all pre-op and post-op investigations should be faxed to the oncologist as soon as they are reported.

**Radiology** CT films and **pathology** slides should be forwarded to the regional cancer centre for review within 2 weeks of orchidectomy.

## 8.0 ONCOLOGY MANAGEMENT

### Multidisciplinary Team Working

All cases of testicular cancer should be referred to the specialist centre following initial diagnosis where they should be managed by a multidisciplinary team (MDT) with a special interest in testicular tumours (NICE 2002).

A video-conferencing SMDT, Leicester, Derby, Lincoln, Coventry, and Northampton is held weekly. All cases of GCT are registered and complex cases are discussed.

The multidisciplinary team brings together expertise in pathology, radiology, surgery and oncology. Core members of the SMDT are consultant oncologist, consultant pathologist and consultant radiologist, as detailed on page 8 of this document. Extended members of the team include the specialist uro-oncology surgeon and cardiothoracic surgeon to whom referrals are made post-chemotherapy for surgery to residual masses.

The aim of the SMDT is ensure the highest standard of care for testicular cancer patients. All new referrals are discussed and relevant pathology and radiology will be reviewed at the SMDT, prior to reaching a treatment decision based on the expertise of those involved. In addition to new referrals, all post chemotherapy CT scans to assess suspected relapses and any complex cases where management is uncertain will be reviewed.

Attendance records and minutes of the meeting are kept for audit purposes. Decisions reached at the SMDT are entered into the patient's notes. Decisions are communicated to the GP.

All pathology and radiology must be received by the Cancer Centre by the Thursday afternoon prior to the appropriate meeting to ensure patient's case history can be discussed at the SMDT within 3 weeks of orchidectomy.

All patients should be offered participation within a clinical trial where appropriate.

### Pathology

Slides from all cases should be reviewed by the designated Pathologist within 3 weeks of orchidectomy. Central review is available for complex cases.

## Radiology

CT scans from all cases should be reviewed by the designated Radiologist within 3 weeks of orchidectomy. Central review is available for complex cases.

All cases should be reviewed at the Testicular SMDT within 3 weeks of orchidectomy.

These are maximum times and earlier referral of imaging and pathology will expedite patient management.

## Treatment Regimens

Patients should be seen with the results of their staging investigations and MDT review within 3 weeks of orchidectomy by the designated consultant oncologist at the Regional Cancer Centre. This facilitates a consultation at which a definitive decision on further management can be made.

Management depends on the histological type and stage of the disease. A combination of the Royal Marsden Hospital staging system and the International Germ Cell Consensus Classification (1997) is used to define stage and prognosis (*see appendices A and B*).

## Seminoma

### Spermatocytic Seminoma

Spermatocytic seminoma is rare and occurs in an older population (>60 years). They rarely metastasise and are managed with a policy of surveillance.

### Stage I Seminoma

Standard Treatment: Chemotherapy: Carboplatin (AUC x 7) x 1 cycle
Alternative Options: Surveillance or adjuvant radiotherapy (now rarely used)
Patients may be entered into clinical trials where appropriate.

### Metastatic Seminoma

There are a number of options for the treatment of metastatic seminoma (Appendix C). Low bulk disease with a para-aortic mass less than 2cm can be treated with radiotherapy 20 Gy (+ boost, 16 Gy) to dog leg field.

Chemotherapy can also be used and is indicated in masses exceeding 2cm in diameter (stage IIB and above). Three cycles of BEP is equivalent to 4 cycles of EP and either can be used. For older patients particularly those who smoke, 4 cycles of EP is recommended to avoid Bleomycin-associated lung toxicity.

More advanced cases of seminoma who fall into the intermediate prognosis category should receive 4 cycles of standard 3- or 5-day BEP, or be entered into an appropriate trial.

## Teratoma

### Stage I Teratoma

Patients are categorised into *high* (40%) or *low* (20%) risk of recurrence according to the presence or absence of lymphatic or vascular invasion as defined by histological review by the designated pathologist.

Low Risk Cases

These patients will enter surveillance protocol.

High Risk Cases

Adjuvant therapy – two cycles of BEP (3-day, Etoposide dose 360mg/$m^2$ per cycle) associated with relapse rate of 1-2%.

**Good Prognosis* Metastatic Disease**

**BEP** 3-day x 3 cycles over 9 weeks (Bleomycin, Etoposide, Cisplatin) (see Appendix C). (Total Etoposide dose 500mg/$m^2$ per cycle).

**Immediate Prognosis* Metastatic Disease**

Will receive 4 cycles of BEP or entered into an appropriate clinical trial.

**Poor Prognosis* Metastatic Disease**

Patients are offered entry into the current TE23 study via referral to Dr Hennig in Nottingham. The intensive chemotherapy will be given in Nottingham; the standard BEP nominated may be delivered locally, where units have a trial agreement with the MRC. Standard chemotherapy for patients unsuitable for the TE23 study is 4 cycles of BEP.

**Recurrent Metastatic Disease**

All patients with recurrent metastatic Germ Cell Tumours should be discussed at the MDT and with the centre providing high-dose chemotherapy as choice of second line treatments may affect future high-dose chemotherapy options. Treatment options include VIP and TIP, but other options may be used depending on the patient's specific circumstances.

**High-dose chemotherapy for patients with relapsed Germ Cell Tumours**

All patients with relapsed Germ Cell Tumours requiring high-dose chemotherapy will be treated in Nottingham under the care of the oncology and haematology teams via referral to Dr Hennig in Nottingham.

**Non Germ Cell Tumours of the Testis**

Epidermoid Cysts

A rare diagnosis in adolescents. Difficult to entirely exclude monomorphic teratoma differentiated. Recommend CT staging and then limited follow up to 3 years.

Sertoli Cell tumours and Leydig Cell Tumours

Indolent malignant tumours, which rarely metastasise. Recommend CT staging and then limited follow up for 3 years. The optimum management for metastatic disease is uncertain.

Testicular Lymphoma

Urgent referral to a specialist haematologist and management in accordance with relevant lymphoma protocol.

**Pre-treatment Management**

For patients with intermediate or poor disease, or with >10 lung metastases visible on CXR, a CT brain is required to complete staging investigations. A bone scan should be carried out on those with an elevated alkaline phosphatase or symptomatic of bone metastases.

Chemotherapy

Baseline investigations should be undertaken, as per chemotherapy treatment protocol.

To minimise the risk of dental sepsis during neutropenia, all patients should have dental status assessed and be considered for specialist referral.

Al patients with subjective hearing loss should have an audiogram before Cisplatin treatment begins.

All patients should have GFR assessed either by EDTA or 24-hour creatinine clearance. Units may chose to only measure the GFR by EDTA or 24-hour creatinine clearance where the calculated GFR (Cockroft) is < 70ml/min.

All patients should be offered sperm cryopreservation before chemotherapy (patients may have been offered sperm cryopreservation prior to surgery).

All patients should be offered entry into appropriate clinical trials where they exist.

Patients should be given written information to reinforce verbal explanations, regarding their treatment and potential side effects, prior to giving consent (See patient Care, page 31).

**Management during treatment**

Chemotherapy

Urgent chemotherapy for advanced metastatic disease should start within 24 hours of referral to the oncologist.

Chemotherapy with adjuvant or curative intent should start within 2 weeks of the decision to treat.

Blood tests should be undertaken per the chemotherapy treatment protocol.

**Bleomycin toxicity**

Patient should have a clinical assessment performed prior to each cycle of BEP as an assessment for Bleomycin lung toxicity. A chest X-ray is required if there is any suspicion for Bleomycin lung toxicity. The diagnosis is clinical one and pulmonary function tests are little assistance (See Appendix E for details).

**Management post-treatment**

Chemotherapy

Patients should complete their planned 3 or 4 cycles of therapy.

Investigations will be undertaken as per the chemotherapy protocol.

Metastatic disease should be re-assessed by CT within 3 weeks of completing the final cycle of chemotherapy. Patients should have a CT scan of all previously abnormal areas to assess response.

If markers are still elevated but stable or falling, they should be observed weekly. Persisting elevation of AFP may be congenital (up to 25) or due to liver toxicity from chemotherapy.

**Management of life threatening advanced metastatic disease**

Occasionally patients will present with immediately life threatening metastatic disease where urgent referral to the oncologist and transfer to the cancer centre is needed so that chemotherapy can commence as soon as possible.

**Aims**

To obtain the diagnosis and initiate treatment with minimum delay.

**Initial Assessment**

The patient should be managed within the Local Cancer Centre. Full history and examination should be carried out, with attention to general physical status, particularly hydration and nutrition.

**Essential Investigations**

The following are mandatory before chemotherapy starts:

- Blood tumour markers (AFP, □-HCG and LDH) should be sent for urgent analysis.

- Confirmation of metastatic disease, e.g. with chest X-ray or abdominal ultrasound scan.

- Assessment of renal function by serum creatinine clearance can be calculated using the Cockcroft formula ([1.23 x (140-age) x weight (kg)] / serum creatinine). If creatinine is elevated (> 125), the cause of renal dysfunction should be determined:

    - pre-renal – due to dehydration
    - abnormality in the kidney – rare in these patients
    - post renal – due to ureteric obstruction (from metastatic disease)

- An EDTA GFR should be arranged urgently.

**Initial Treatment**

- Patients may be severely dehydrated and require additional intravenous fluids as well as usual chemotherapy pre-hydration.

- Post renal obstruction is an indication for ureteric stent or external drainage (nephrostomy) prior to any chemotherapy – refer to urologist or radiologist on-call

- Those with bulky metastatic disease are at risk of tumour lysis syndrome (Pentheroudakis et al 2001) and Allopurinol 300mg OD should be commenced immediately on admission.

- Clexane 40mg OD should be administered for prophylaxis of thromboembolic events if there is bulky metastatic disease adjacent to major vessels. This should be continued at home until re-scan shows resolution.

- Symptomatic treatment with analgesia and anti-emetics may also be required.

**Chemotherapy**

Standard treatment is with BEP chemotherapy (Bleomycin, Etoposide and Cisplatin) and 5-day BEP should be commenced until full staging has been completed, unless patients are enrolled into an appropriate trial, in which case the trial protocol will be followed. Patients may be treated with an initial cycle of Carboplain (AUC3) and Etoposide 100mg/$m^2$ day 1 & 2.

**Further Investigations**

If not done before treatment, the following can be completed during working hours:

- Blood samples taken before chemotherapy for AFP, B-HCG and LDH can be stored in the lab for later analysis. These provide important prognostic information and assist in treatment monitoring.

- Ultrasound scan of the testis.

- Full staging with CT scan of thorax, abdomen and pelvis. Intermediate and poor prognosis patients, or those with > 10 lung metastases visible on chest x-ray, also require a CT head scan.

- Accurate assessment of renal function by EDTA clearance following correction of pre-renal and post-renal causes of dysfunction. Assessment of renal function using the COCKCROFT formula should always be made where EDTA is not immediately available.

- Bone scan if alkaline phosphatase is elevated or symptomatic.

- Sperm banking should be offered.

## 9.0 MANAGEMENT OF RESIDUAL MASSES AFTER CHEMOTHERAPY

All cases with residual masses after chemotherapy should be reviewed by the MDT within one week of completing the post-treatment restaging investigations.

**Seminoma**

Resection of post-chemotherapy residual masses of **less than 3 cm** is not routinely indicated for seminoma, as surgery is difficult and potentially dangerous. A policy of surveillance is adopted as residual masses usually shrink over 12 –24 months. CT scans are performed 6 monthly until complete remission or disease stabilisation. Biopsy is recommended if masses increase in size.

**Teratoma**

Residual masses may remain after chemotherapy and marker normalisation. They may contain viable tumour, differentiated teratoma or fibrosis/necrosis. The aim of surgery is complete excision of the residual mass and associated abnormal tissue and may involve

template clearance of para-aortic nodes. Incomplete excision is associated with poor prognosis.

This type of surgery is rare and should only be undertaken by a specialist surgeon.

- Residual abdominal masses — Mr Lemberger, Nottingham City & Mr Kocklebergh, UHL
- Residual pulmonary masses — Mr Duffy, Nottingham City & Mr D Waller, UHL

***Indications for RPNLD in NSGCC***

1. New patients at risk should be identified at presentation and discussed in outline at the SMDT.
2. Men with residual masses of 1 cm or greater or those where there is < 70% shrinkage should be referred for RPNLD. Any men with smaller masses, particularly those of low attenuation should be discussed.
3. Markers should have normalised before surgery
4. Surgery should be performed as a planned procedure after completion of 1st line chemotherapy.
5. An exception is "growing teratoma syndrome" with negative markers during chemotherapy. Resection should be done as soon as safely possible without compromising chemotherapy.
6. In patients with multiple masses the retroperitoneal mass should usually be resected first because if only fibrosis is present, surgery for the other masses can usually be avoided. The exception is if the other masses are significantly larger than the retro-peritoneal masses.
7. "Desperation" surgery should be considered in patients with rising markers who have completed at least two regimens of chemotherapy.
8. Surgery should *not* be carried out in patients whose masses have *completely resolved* in the final post chemotherapy CT.

**Counselling for node dissection**

1. Indications as above
2. Rationale is diagnosis of residual and removal with the intention of cure if TD present. Identification of persistent cancer may require further chemotherapy and will affect the follow-up regimen.
3. Information about outcomes in literature and personal surgical experience.
4. Open RPNLD involves a long (usually midline, occasionally transverse) incision and a hospital stay for about 5 to 10 days.
5. Risk of death is 1% in post-chemotherapy patients.
6. Risk of small bowel obstruction or ileus is 5 – 10%
7. Risk of lymphocoele requiring percutaneous drainage is 5 – 10%
8. Weak or absent ejaculation occurs, the precise incidence depends on the size and nature of the mass, and on the operative procedure required.
9. Chylous ascites may result.

***Indications for RPNLD in Seminoma***

1. Infrequent and confined to patients with solitary, surgically respectable (i.e. globular) masses > 3 cm after second-line salvage chemotherapy, surgery being carried out to exclude non-seminomatous elements.

Further chemotherapy should be considered where there has been incomplete excision and/or pathology confirms viable GCT in the resected specimen.

**Orchidectomy**

All patients treated with emergency chemotherapy prior to orchidectomy should be referred for orchidectomy following chemotherapy treatment.

## 10.0 MANAGEMENT OF CENTRAL NERVOUS SYSTEM

CNS metastases are rare but may be seen in three circumstances:

- at initial presentation (usually in the context of gross wide spread disease with very high serum markers)
- as an apparently isolated relapse site
- in the context of chemotherapy resistant systemic relapse.

The first two presentations are potentially curable.

Patients with resectable lesions who are fit for surgery should be evaluated by a neurosurgeon. At initial presentation surgery and chemotherapy is preferred rather than radiotherapy. Newly diagnosed patients should also receive combination chemotherapy (as per Treatment Regimens p.16).

Radiotherapy is useful for isolated CNS relapse (with or without surgery) or as palliation in end stage disease.

## 11.0 FOLLOW UP MANAGEMENT

All patients should be followed-up on protocol by the designated oncology team.

The Nurse Practitioner will co-ordinate care and offer counselling/support for all patients.

Patients at high risk of carcinoma in situ in the remaining testis (i.e. under 30 years of age at primary diagnosis and with a testicular volume less than 12ml, or with a history of testicular mal descent), who did not have biopsy at the time of orchidectomy, should be offered the opportunity to consider a contra-lateral biopsy 2 years after completion of treatment (see Management of the Contralateral Testis, below).

## 12.0 MANAGEMENT OF THE CONTRALATERAL TESTIS

Optimum management of the contralateral testis is controversial because of the potential complications of treatment. Patients with testicular GCT have an overall increased risk of a second testicular tumour of approximately 2 – 5%. However, it is possible to identify a sub-group who are at greater risk.

There are three factors, which are associated with an increased risk.

- an early age at diagnosis of first primary (less than 31 years),
- **and** a low testicular volume (less than 12mls).
- **or** a history of mal descent.

Within this subgroup, the risk a second testicular tumour rises to approximately 35%.

For those identified at a higher risk, the option of a biopsy of the contralateral testicle will be discussed. The issue may be raised by the surgeon at the time of orchidectomy or by the oncologist at a later date. It can be carried out at the time of the first orchidectomy or following treatment.

The reason for a biopsy is to detect any signs of pre-cancerous cells in the healthy testicle, which may develop into malignant cancer at a later date. This is known as carcinoma *in situ* or CIS. The risk of CIS progressing into cancer over five years are reportedly up to 50% but it is believed that this will occur in all patients with CIS if follow up is long enough.

The biopsy is carried out under general anaesthetic. A small incision is made in the scrotum and a small amount is testicular tissue is removed for analysis. If the patient has been treated with chemotherapy, it is important to wait for at least two years following completion of the treatment. This is so that a reliable result is obtained as chemotherapy can affect healthy cells in the short term and obscure the result.

If CIS is diagnosed or a biopsy has been declined, there are two options for management. One is close surveillance of the remaining testicle with an annual ultrasound scan to assess for signs of a second developing tumour. At the fist sign that the CIS is progressing into malignant cancer, a second orchidectomy can be considered in high risk patients.

The long-term side effects of a second orchidectomy are:

- Permanent infertility.
- Hormonal failure requiring lifelong hormone replacement with testosterone.

In addition, there is the risk that the tumour is not detected before it has metastasised, reducing the overall prognosis and potentially exposing the patient to harmful side effects of cytotoxic chemotherapy or radiotherapy.

The other option following a CIS positive biopsy is treatment up-front to prevent progression. Treatment involves radiotherapy of 20Gy in 10 fractions to the testicle. This will reduce the risk of cancer to virtually 0%, but unfortunately has the side effects noted above, (i.e. infertility and potential hormonal failure, though the risk of total hormonal failure is less).

If the biopsy is negative, then the risk of developing a second tumour are very small.

The side effects will be discussed in detail with the patient before a decision is reached. It is important to remember that the risk of a second tumour for those at high risk is less than 40% and that, because patients usually detect second tumours themselves early through testicular self examination, they have a very good prognosis and are often cured with orchidectomy alone.

## 13.0 SPECIALIST PALLIATIVE CARE

Palliative care focuses on providing holistic care and maintaining and improving quality of life by effectively managing the side-effects of the disease or treatment. As palliative care is a speciality in its own right, only brief general advice can be given here about particularly high-risk cases. The general rule is if in doubt “refer” or at least “discuss” with a specialist palliative care colleague. Advice can be given without full referral, particularly when the patient is sensitive or concerned about the idea of referral to a palliative care service, which

they may associate with the end of life only. The following patients should be considered at particularly high risk:

- Those who have had a severe psychological or social problems before the onset of their illness, or as a result of their illness.
- Those with pains which are difficult to treat, e.g. neuropathic pain.
- Patients with difficult to control, distressing symptoms.
- Patients with young families.

There are specialist palliative care teams throughout the network and referral guidelines are available locally.

## 14.0 PRIMARY CARE TEAM

General Practitioners will have access to referral guidelines.

General Practitioners will be notified of the patients' treatment plan within 5 working days of a decision being made of the patients discharged within 24 hours.

General Practitioners will receive an evaluation of the patients' condition after each follow-up appointment where the patient's condition has changed or management decisions have been made.

## 15.0 FAMILIAL DISEASE

An increased risk of developing testicular germ call cancer has been noted in first degree relatives, though the risk to fathers or sons of cases has been reported to be less than the risk to brothers (Heimdal et al 1996, Forman et al 1992). The relative risk to brothers of testicular cancer patients has been found to lie between 6 and 10 (Tollerud et al 1985, Forman et al 1992, Heimdal et al 1996) – the absolute risk is still low.

Patients who have a history of testicular cancer in their first degree relatives or multiple cases in their extended family are of interest to researchers. Referral to Prof Huddart at the Royal Marsden Hospital for participation in his research programme will be discussed during their initial consultation with the oncologist.

No genetic screening test yet exists which indicates pre-disposition to germ cell cancer of the testis. The risks to sons and brothers of testicular cancer cases will be explained to the patient at their initial consultation and they are encouraged to promote testicular self-examination in their male siblings and children.

## 16.0 POPULATION SCREENING

There is no indication for population screening in GCT.

## 17.0 EAST MIDLANDS UROLOGICAL CANCER PATHWAY FOR TEENAGE AND YOUNG ADULT PATIENTS

### 17.1 Initial management: (11-7A-213)

#### 17.1.1 Patients aged 13-18 years:

- All patients between the ages of 13-18 with suspected gynaecological cancer living within the East Midlands (East Midlands region as part of the East Midlands Cancer Network boundaries) to be referred to the East Midlands Children's and Young Persons' Integrated Cancer Service

  *(Principal Treatment Centre at Nottingham University Hospitals, Queen's Medical Centre Campus (Nottingham Children's Hospital) and University Hospitals of Leicester, Leicester Royal Infirmary site)*.
- This service is accessed by contacting the Paediatric Oncology Consultant on-call at Queens Medical Centre in Nottingham when a patient is judged likely to have cancer. The contact number for this service is 0115 849 3302.
- These patients are treated as part of the paediatric pathway. The paediatric pathway requires the centralisation of diagnostic investigations, surgery and the most intensive chemotherapy to QMC but most patients from Leicestershire, Rutland and Northamptonshire will receive most or all of their treatment in Leicester. There is also a shared care arrangement with the paediatric team at Northampton General Hospital.
- The Paediatric team would welcome a discussion about patients in this age group in case a specific patient needs an individualised pathway.

#### 17.1.2 Patients aged 18 years (but <19y)

- Need to be treated in an age-specific cancer facility but depending on education/employment/diagnosis/trial availability etc it may be appropriate for them to be treated by the Paediatric or the Adult site-specific pathway (in age-appropriate facilities).
- A discussion between the Paediatric team and the Site-specific consultant about patients in this age group helps to ensure that patient's needs are best served.
- This decision will be made on a patient-by-patient basis but the location of care should be in an age specific environment.
- The *East Midlands Children's and Young Persons' Integrated Cancer Service* currently provides this service within a predominantly paediatric setting in the Leicester Royal Infirmary and at Queens Medical Centre in Nottingham. This is being upgraded in order to enhance the teenage age-specific cancer facilities.

#### 17.1.3 Patients aged 19-24 years

- All patients in this age range will be offered the choice of being:

  1) referred to a young adult age-specific cancer facility
  2) accessing local adult cancer services

  *(Please also refer to the National Guidance for GPs: Clinical Practice for the assessment of Young Women aged 20-24 with Abnormal Vaginal Bleeding)*

- The East Midlands will have young adult (19 – 24y) age-specific cancer facilities at the following sites:

- Leicester Royal Infirmary, University Hospitals of Leicester (13-24 years)
- Nottingham City Hospital, Nottingham University Hospitals (19-24 years)
  *(Nottingham Children's Hospital, Queen's Medical Centre Campus*
  *(Nottingham University Hospitals – City Hospital Campus (13-18 years))*

***The young adult age-specific inpatient, day care and outpatient facility is under development and until this is in place the additional age-specific support that these patients will be able to access in Leicester and Nottingham will be limited to an on-site teenage and Young Adult Activity Coordinator/Development Officer, Social Worker and TYA Clinical Nurse Specialist. As soon as the facilities are completed all Site - Specific MDTs will be informed.***

### 17.2 MDT Discussion

#### 17.2.1 Patients aged 13-24 Years

- All patients diagnosed with cancer between the ages of 13-24, living within the East Midlands (East Midlands region as part of the East Midlands Cancer Network boundaries) are to be discussed at the TYA MDT and relevant Site Specific MDT or Paediatric Cancer MDTs.
- The TYA MDT will discuss the treatment plan forwarded from the (Site Specific MDT/Paediatric Cancer MDT) and discuss the patients psychosocial care needs.
- Please refer to the East Midlands TYA Multidisciplinary Operational Policy for the referral process *(referral information outlined in brief below)*

### 17.3 Referral Process

#### 17.3.1 Referral general points:

- Referrals to the TYA MDT will need to on the agreed referral form
- This referral form can be obtained from the Trust Cancer Centre, East Midlands Cancer Network website www.eastmidlandscancernetwork.nhs.uk or the Principal Treatment Centre.

#### 17.3.2 Referral routes:

The following referral routes have been identified:

- Site Specific MDTs (MDT Coordinator) 19-24 years
- Paediatric Cancer MDTs (MDT Coordinator)
- Surgeon at Biopsy stage of the pathway
- Childrens and Young Persons' Integrated Cancer Service 13-18 years
- Via Pathology Department
- Via Alert System
- In exceptional circumstances trusts/Departments i.e. other medical departments or psychosocial/psychological service providers
- In exceptional circumstances by GP/Dentist referral

#### 17.3.3 Responsibility for making the referral:

- Responsibility for making the referral will lie with local MDT Coordinators, Consultants, Cancer Centres and Clinical Nurse Specialists

- All referral forms accompanied with relevant information relating to the patient will either be faxed to the Principal Treatment Centre or electronically using the nhs.net email address or via post. Contact details can be found by telephoning UHL 0116 2586721 and NUH 0115 9691169 ext 54550 and asking for assistance relating to the TYA MDT.
- All patients aged 15-24 years will need to be registered with the TYAC Registration Process; this will be completed via the TYA MDT.

### 17.4 Treatment Responsibilities:

- All cases even those who choose to be treated outwith either the PTC or a designated hospital MUST be registered with the PTC and discussed at both the site specific and TYA MDTs
- The treatment plan is jointly agreed by the site specific and TYA MDT and will reflect the relevant network or national clinical guidelines
- Final diagnostic responsibility for TYA patients lies with the site specific MDT
- Arrangements for age specific support lies with the TYA MDT
- Follow up will be as per the appropriate disease guideline

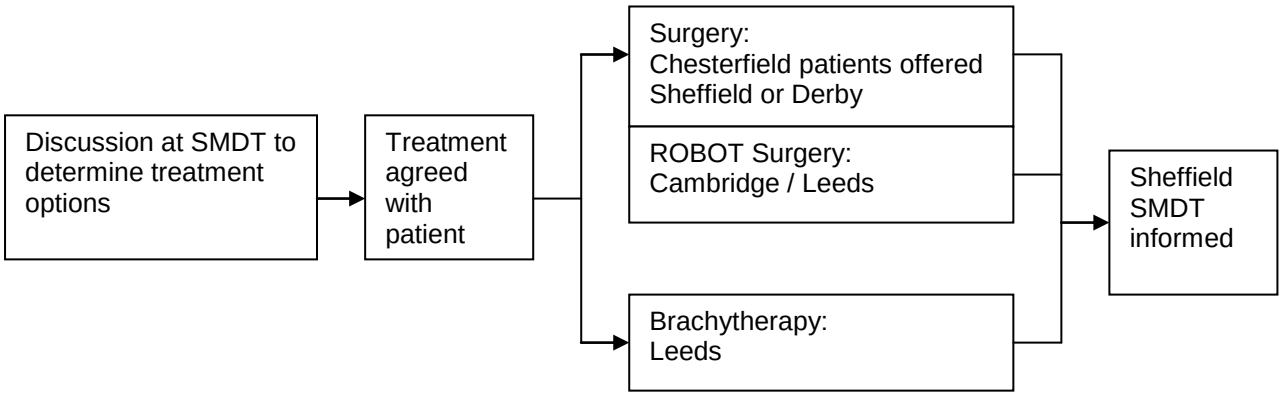
## 18.0 OUT OF NETWORK REFERRALS

There are a number of out of network referrals required either for specialist treatment not undertaken within the network or through patient choice.

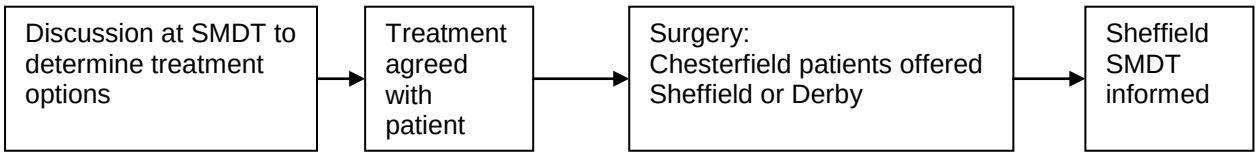
With the exception of penile cases, all new cancer diagnoses that require discussion with the Specialist MDT (as defined by the IOG) are discussed at the Sheffield SMDT. Any patients opting for treatment out of network are referred by the locality consultant, this referral is then logged with the SMDT.

The routine out of network referrals are outlined below, it is noted that patients always have the right to exercise choice to be referred to any other specialist centre.

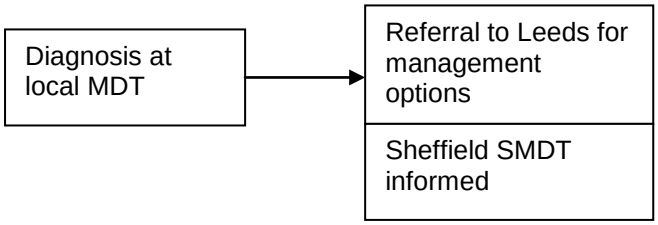
### a) Localised prostate cancer




### b) Bladder cancer




### c) Penile cancer



## 18.0 REFERENCES


COIN CANCER WORKING GROUP (1999) Guidelines on the Management of Audit Testicular Germ Cell Tumours, Royal College of Radiologists Clinical Oncology Information Network in Partnership with Scottish Intercollegiate Guidelines Network.

JOINT COUNCIL FOR CLINICAL ONCOLOGY, Reducing Delays in Cancer Treatment: Some TARGETS London Royal College of Radiologists. 1993

NICE (2002) Guidance on Cancer Services Improving Outcomes in Urological Cancers. National Institute of Clinical Excellence

Referral Guidelines for Suspected Cancer Consultation Document, NHS Executive Eastern Region 1999

FORMAN D ET AL (1992) Familiar Testicular Cancer. A Report of the UK Family Register, Estimation of Risk and HLA Class 1 Sib-Pair Analysis, British Journal of Cancer 65, 255 – 262

HARLAND S J ET AL (1998) Intratubular Germ Cell Neoplasia of the Contralateral Testis in Testicular Cancer: Defining a High Risk Group, Journal of Urology 160; Oct, pp 1353 – 1357

HEIMDAL K ET AL (1996) Familial Testicular Cancer in Norway and Southern Sweden, British Journal of Cancer 73 (7) 964 – 969

HORWICH A (Ed) (1991) Testicular Cancer Investigation and Management, Chapman and Hall Medical, London.

MEIDAHL PETERSON P ET AL (2002) Effect of graded testicular doses of radiotherapy in patients treated for carcinoma-in-situ in the testis. Journal of Clinical Oncology V20, N6, 16 Mar pp 1537 – 1543

PENTHEROUDKIS G ET AL (2001) Spontaneous acute tumour lysis syndrome in patients with metastatic germ cell tumours. Report of two cases (short communication), supportive care in cancer, 9(7) pp 554 – 557

SAETER G, Fossa D and Norma N (1987) Gynaecomastia Following Cytotoxic Therapy for Testicular Cancer, British Journal of Urology, 59, 348 – 352

TOLERUD D J ET AL, (1985) Familiar Testicular Cancer and Urogenital Development Anomalies, Cancer SS, 1849 – 1854

**APPENDICES**

## APPENDIX A

| **PROGNOSTIC GROUPS IN METASTATIC NSGCT**<br><br>*International Germ Cell Consensus Classification 1997* |
|---|
| **GOOD PROGNOSIS**<br>56% teratoma. 5 year survival – 92%<br><br>Testis / retroperitoneal primary<br>&<br>No non-pulmonary visceral (NPV) metastases<br>&<br>Good markers – all of<br>AFP < 1,000 mg / ml<br>B-HCG < 5,000 iu / l<br>LDH < 1.5 x ULN |
| **INTERMEDIATE PROGNOSIS**<br>28% teratoma. 5 year survival – 80%<br><br>Testis / retroperitoneal primary<br>&<br>No NVP metastases<br>&<br>Intermediate markers – any of<br>AFP >1,000 < 10,000<br>B-HCG > 5,000 < 50,000<br>LDH > 1.5 x <10 x ULN |
| **POOR PROGNOSIS**<br>16% teratoma. 5 year survival – 48%<br><br>Mediastinal Primary<br>Or<br>NVP metastases<br>Or<br>Poor markers – any of<br>AFP > 10,000<br>B-HCG > 50,000<br>LDH > 10 x ULN |
| **PROGNOSTIC GROUPS FOR METASTATIC SEMINOMA** |
| **GOOD PROGNOSTIC**<br>90% Seminoma. 5 year survival – 82%<br><br>Any primary site<br>&<br>No NPV metastases<br>&<br>Normal AFP, and B-HCG, any LDH |
| **INTERMEDIATE PROGNOSIS**<br>10% seminoma. 5 year survival – 72%<br><br>Any primary site<br>&<br>NPV metastases<br>&<br>Normal AFP, B-HCG, any LDH |
| **No seminoma patients classified as poor prognosis** |

*Adapted from International Germ Cell Collaborative Group (1997) International Germ Cell Consensus Classification: A Prognostic Factor Based Staging System for Metastatic Germ Cell Cancers, Journal of Clinical Oncology 15(2) February, 594 - 603*

**APPENDIX B**

| Royal Marsden Hospital Staging Classification | | |
|---|---|---|
| **Stage** | | **Definition** |
| **I** | | Confined to testis |
| **Im** | | Rising post-orchidectomy markers only |
| **II** | | Abdominal Lymphadenopathy |
| | A | < 2 cm |
| | B | 2 – 5 cm |
| | C | > 5 cm |
| **III** | | Supradiaphragmatic Lymphadenopathy |
| | O | No abdominal disease |
| | ABC | Abdominal node size as in Stage II |
| **IV** | | Extralymphatic Metastases |
| | L1 | < 3 lung mets |
| | L2 | > 3 lung mets all < 2cm diameter |
| | L3 | > 3 lung mets 1 or more >2 cm |
| | H+ | Liver involvement |
| | C | Cerebral metastases |
| | O | Bony metastases |

**Source:** HORWICH A (Ed) (1991) Testicular Cancer Investigation and Management, Chapman & Hall Medical, London, page 11

We acknowledge the use of elements of the West Anglia Cancer Network Guideline

**APPENDIX C**

# Summary of Chemotherapy Treatment Options for Male Germ Cell Tumours

## Adjuvant chemotherapy

- Seminoma
  - Carboplatin x 1 (AUC 7 based on measured GFR, e.g. EDTA GFR)

- Non-seminoma
  - 3-day BEP x 2
    - Cisplatin 100mg/$m^2$, Etoposide 360mg/$m^2$, Bleomycin 90kU

## First line chemotherapy

- BEP chemotherapy (3- and 5-day) and EP chemotherapy
  - 3-day BEP or 5-day BEP x 3 (good prognosis IGCCCN) or x 3 + 1 EP (intermediate and poor prognosis IGCCCN)
    - Cisplatin 100mg/$m^2$, Etoposide 500mg/$m^2$, Bleomycin 90kU
  - EP
    - Cisplatin 100mg/$m^2$, Etoposide 500mg/$m^2$

## Second line chemotherapy

- Favourable prognosis (low markers, low volume, CR to first line treatment, testicular primary):
    - TIP: PacliTaxel, Ifosfamide, CisPlatin
      - Paclitaxel 250mg/$m^2$, Ifosfamide 6g/$m^2$, Cisplatin 100mg/$m^2$ per cycle
    - VIP: Vinblastine, Ifosfamide, CisPlatin
      - Vinblastine 0.11mg/kg D1+2, Ifosfamide 1.5g/$m^2$ D1-5, Cisplatin 20mg/$m^2$

- Unfavourable prognosis (incomplete response, high markers, high volume, extra-testicular primary)
    - High dose chemotherapy, preferred regimen TICE or CarboPEC
    - Best supportive care

## Palliative Chemotherapy

- The choice of palliative chemotherapy regimens depends on previously received chemotherapy, tolerance to prior treatment and persistent toxicities. Treatment therefore has to be adapted to the individual requirements of the relapsed patient. Active anticancer agents include:
    - Paclitaxel, Gemcitabine, Etoposide, Bevacizumab

## APPENDIX D

Pneumonitis and lung fibrosis are the most important side effects of Bleomycin. Fever, rigors, and skin toxicity may occur as well. The risk of these complications increases with the total dose employed. Dyspnoea on exertion and the development of fine rales at auscultation may precede chest X-ray abnormalities. In these cases, and if infectious lung complications, other than bronchitis occur, Bleomycin should be stopped. In case of surgical procedures or respiratory insufficiency, oxygen therapy should be administered with caution because of the increased risk of oxygen toxicity to the lung in Bleomycin treated patients.

Patients who have been treated with Bleomycin are offered a Bleomycin alert card providing advice on Bleomycin lung toxicity and the avoidance of unnecessary oxygen treatment.

**APPENDIX E**

# Guidelines for follow-up of (male) patients with Germ Cell Tumours

*(and other testicular malignancies)*

**First implemented: April 2003 (St. James's University Hospital Leeds)**
**Revised and updated: April 2007, May 2008, June 2009**

Follow-up guidelines are divided up into various groups, with the frequency of clinic visits, CT scans and CXRs varying, depending upon the likelihood of relapse.

It is difficult to provide an exhaustive list. **Patients for whom there is any uncertainty as to which category they belong to should be discussed with a consultant.**

**CXRs:**

In view of the importance of identifying pulmonary relapse, **all CXRs should be reported by a radiologist**.

**CT scans:**

Staging scans are of thorax, abdomen and pelvis;
Follow-up scans are of thorax and abdomen **only**, *unless* there has been previous inguino-scrotal surgery, prior to the diagnosis of testicular malignancy e.g. orchidopexy, inguinal hernia repair, inguinal exploration (but not vasectomy). Discuss with consultant if patient has had retroperitoneal surgery or radiotherapy, paraaortic nodal disease or tumour invasion through the tunica vaginalis, as these patients may require inclusion of the pelvis as well.

## Basics of pathology

## Seminoma

Vast majority are "classical" seminoma
A small minority are spermatocytic seminoma, with a much lower risk of recurrence

When not otherwise specified, "seminoma" should be assumed to be classical seminoma

(RMH) Stage I patients can be divided into risk groups based upon the histology of the orchidectomy specimen. Important risk factors are size of tumour (>4cm) and presence of rete testis invasion

## NSGCT = non-seminomatous germ cell tumour

incl: Teratoma
- Teratoma differentiated; mature teratoma
- Malignant teratoma undifferentiated (MTU); embryonal carcinoma
- Malignant teratoma intermediate (MTI)
- Malignant teratoma trophoblastic; choriocarcinoma

Yolk sac tumour

Stage I patients can be divided into risk groups based upon the histology of the orchidectomy specimen. Important risk factor(s) is (are) presence or absence of vascular invasion for NSGCT; size of tumour and rete testis invasion for seminoma.

# 'Mixed' GCTs (i.e. histology containing both seminoma and NSGCT) should be treated as NSGCT

# Choice of follow-up schedule (see also flow-chart)

| | | |
|---|---|---|
| **Low risk of relapse** | | |
| | Seminoma (spermatocytic) | K |
| | Sertoli cell tumour | L |
| | Leydig cell tumour | L |
| | Stage I NSGCT (teratoma differentiated) on surveillance | D |
| | Stage I seminoma (classical) post-RTx | A1 |
| | Stage I seminoma post-adjuvant chemo | A2 |
| | Stage I NSGCT after adjuvant chemo (2# BEP) | B |
| | | |
| **Intermediate risk of relapse** | | |
| | Stage 1 seminoma, surveillance only | A3 |
| | Stage I NSGCT (except TD) on surveillance | C |
| | Stage IIa & IIB seminoma post-RTx | E |
| | Good prognosis metastatic GCT (seminoma or NSGCT) with no evaluable disease following chemotherapy and/or resection of residual disease containing only necrotic tumour | F |
| | Metastatic NSGCT with residuum after chemotherapy where resection of residual disease contains viable Teratoma Differentiated (Mature Teratoma) | J |
| | | |
| | | |
| **High risk of relapse** | | |
| | Intermediate/poor prognosis metastatic GCT (seminoma or NSGCT) with no evaluable disease following chemotherapy | G |
| | Intermediate/poor prognosis metastatic GCT (seminoma or NSGCT) with residual mass on CT following chemotherapy but resection specimen containing only necrotic tumour (i.e. no viable tumour) | G |
| | Metastatic NSGCT with residuum after chemotherapy where resection of residual disease contains viable undifferentiated tumour | H |
| | Relapsed patients following 2$^{nd}$-line chemo | H |
| | Following high-dose chemotherapy | M |
| | Poor prognosis NSGCT treated within the TE23 protocol | N |

# Follow-up protocol A1

Indications: a) Stage I Seminoma, following radiotherapy to abdo LNs

**NB There are separate follow-up protocols for patients treated with adjuvant chemotherapy (usually single-dose carboplatin - see protocol A2) or on post-operative surveillance only (protocol A3).**

**All dates are from completion of radiotherapy**

| **A1** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 12 months | 1 | 3, 6, 9mths | 3 |
| Year 2 | 16, 20, 24mths | 3 | | 0 | 16, 20, 24mths | 3 |
| Year 3 | 30, 36mths | 2 | | 0 | 30, 36mths | 2 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 60mths | 1 | | 0 | 60mths | 1 |
| Years 6-10 | | 0 | | 0 | | |
| Total | | 12 | | 2 | | 11 |

**Discharge at 5 years**

Notes:

1) CXR monitoring is particularly important in this group – majority of relapses are in lungs
2) See also notes above on CT scans (p2)

# Follow-up protocol A2

Indications: a) Stage I Seminoma, following adjuvant chemotherapy (usually single dose of carboplatin)

**NB There are separate follow-up protocols for patients treated with adjuvant radiotherapy (see protocol A1) or on post-operative surveillance only (protocol A3).**

**All dates are from completion of chemotherapy**

| **A2** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR* | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 6, 12mths | 2 | 3, 9mths | 2 |
| Year 2 | 16, 20, 24mths | 3 | 24mths | 1 | 16, 20mths | 2 |
| Year 3 | 30, 36mths | 2 | | 0 | 30, 36mths | 2 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 60mths | 1 | | 0 | 60mths | 1 |
| Years 6-10 | | 0 | | 0 | | |
| Total | | 12 | | 4 | | 9 |

## Discharge at 5 years

Notes:

1) CXR monitoring is particularly important in this group – majority of relapses are in lungs

2) See also notes above on CT scans (p2)

3) An additional protocol to take into account relates to the results of the MRC TE19 trial (Oliver et al, 2005. Lancet 266: 293-300)

4) MRC TE19 trial data suggest
    a. Very few relapses later than 5 years after Carboplatin chemotherapy
    b. Abdominal relapses are more likely than after adjuvant radiotherapy. CT follow-up above is therefore based on the TE19 protocol, and includes 2 more CT scans than in A1

# Follow-up protocol A3

Indications: a) Stage I Seminoma, with post-operative surveillance only

**NB There are separate follow-up protocols for patients treated with adjuvant radiotherapy (see protocol A1) or adjuvant chemotherapy (usually single-dose carboplatin - protocol A2).**

**All dates are from orchidectomy**

| **A3** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan* | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 6, 12 mths | 2 | 3, 9mths | 2 |
| Year 2 | 15, 18, 21, 24mths | 4 | 18, 24mths | 2 | 15, 21mths | 2 |
| Year 3 | 28, 32, 36mths | 3 | 36mths***** | 1 | 28, 32, 36mths | 3 |
| Year 4 | 42, 48mths | 2 | 48mths***** | 1 | 42, 48mths | 2 |
| Year 5 | 54, 60mths | 2 | 60mths***** | 1 | 60mths | 1 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 15 | | 8 | | 10 |

**Discharge at 5 years**

Notes:

1) CXR monitoring is particularly important in this group – majority of relapses are in lungs

2) There are more CT scans than for patients receiving adjuvant therapy (follow-up protocols A1 and A2)

3) See also notes above on CT scans (p2)

4) *CT scans at 36, 48 and 60 months should be abdo only

*5)* Subject to modification to be in-line with forthcoming TRISST trial (MRC TE24)

## Follow-up protocol B

Indications: a) High-risk Stage I NSGCT (following 2# adjuvant chemo)

### All dates are from completion of post-operative chemotherapy

| **B** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 12mths | 1 | 6mths | 1 |
| Year 2 | 15, 18, 21, 24 | 4 | 24mths | 1 | 18mths | 1 |
| Year 3 | 28, 32, 36mths | 3 | | 0 | 36mths | 1 |
| Year 4 | 42, 48mths | 2 | | 0 | 48mths | 1 |
| Year 5 | 54, 60mths | 2 | | 0 | 60mths | 1 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 15 | | 3 | | 5 |

**Discharge at 5 years**

Notes:

1) See also notes above on CT scans (p2)

2) This revised protocol omits the previous 3-month CT scan as MRC TE08 trial has demonstrated that scans are only needed at 3 and 12 months (see Protocol C), and the risk of relapse in this group is lower than in the TE08 group.

## Follow-up protocol C

Indications: a) Low-risk Stage I NSGCT (surveillance only)

**NB There is a separate policy for Stage I NSGCT where histology reveals Teratoma Differentiated (Mature Teratoma)**

**All dates are from date of orchidectomy**

| **C** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | Monthly | 12 | 3 & 12mth | 2 | 2, 4, 6, 8, 10mths | 5 |
| Year 2 | 2-monthly | 6 | | 0 | 16, 20, 24mths | 3 |
| Year 3 | 3-monthly | 4 | | 0 | 30, 36mths | 2 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 54, 60mths | 2 | | 0 | 60mths | 1 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 26 | | 3 | | 13 |

**Discharge at 5yrs**

Notes:

1) These patients are at significantly higher risk of relapse than patients who have received adjuvant chemotherapy; therefore follow-up is more intensive

2) Previous protocol modified to take account of results of MRC TE08 trial (2 scans vs 5 – Rustin et al, 2007. J Clin Oncol 25: 1310-1315)

3) See also notes above on CT scans (p2)

# Follow-up protocol D

Indications: a) Stage I NSGCT – histology = Teratoma Differentiated (Mature Teratoma)

A limited surveillance protocol – less intense than for other Stage I NSGCTs, with other histologies, reflecting lower risk of relapse in the TD group

**All dates are from date of orchidectomy**

| **D** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 2-monthly | 6 | 6, 12mths | 2 | | 0 |
| Year 2 | 6-monthly | 2 | | 0 | 24mths | 1 |
| Year 3 | 6-monthly | 2 | | 0 | 36mths | 1 |
| Year 4 | | 0 | | 0 | | 0 |
| Year 5 | | 0 | | 0 | | 0 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 10 | | 3 | | 2 |

**Discharge after 3 yrs**

Notes:

1) One aspect of surveillance is to pick up those tumours which actually might contain undetected undifferentiated elements – these are likely to show up as rising tumour markers, and are likely to be picked up in the first year of follow-up.

2) See also notes above on CT scans (p2)

# Follow-up protocol E

Indications: a) Stage II Seminoma, following radiotherapy

**NB Some Stage IIb patients will have had chemotherapy – follow-up Protocol F**

## All dates are from completion of radiotherapy

| **E** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR* | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 3mths** | 1 | 6, 9, 12mths | 3 |
| Year 2 | 16, 20, 24mths | 3 | | 0 | 16, 20, 24mths | 3 |
| Year 3 | 30, 36mths | 2 | | 0 | 30, 36mths | 2 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 60mths | 1 | | 0 | 60mths | 1 |
| Years 6-10 | Annual | 5 | | 0 | Annual | 5 |
| Total | | 17 | | 2 | | 16 |

**Discharge at 10 yrs**

Notes:

1) ** If CT scan following RTx is abnormal, repeat the scan 6-monthly until normal or stable for 3 scans.

2) See also notes above on CT scans (p2)

# Follow-up protocol F

Indications:
a) Stage Im NSGCT
b) Good prognosis group metastatic tumours treated with chemo
   i) All metastatic seminoma, except intermediate prognosis
   ii) NSGCT stage II-IV with no residual disease on CT post-chemo
c) NSGCT stage II-IV with residual disease on CT following chemo, but resection showing no viable tumour

**NB There is a separate follow-up protocol for patients as b) or c) above, but in intermediate or poor prognostic groups**

**All dates are from completion of chemotherapy/ resection of residuum**

| **F** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Immediately following chemo | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 6, 12mths | 2 | 3, 9mths | 2 |
| Year 2 | 15, 18, 21, 24 | 4 | 24mths | 1 | 15, 18, 21mths | 3 |
| Year 3 | 30, 36mths | 2 | | 0 | 30, 36mths | 2 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 54, 60mths | 2 | | 0 | 54, 60mths | 2 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 14 | | 4 | | 11 |

**Discharge at 5yrs**

Notes:

1) For patients with metastatic seminoma with residual disease after chemotherapy, follow-up with regular CT to maximum response

2) See also notes above on CT scans (p2)

# Follow-up protocol G

Indications: a) Intermediate prognosis group seminoma following chemo
b) Intermediate and poor prognosis group NSGCTs
i) with no residual disease on CT following chemo
ii) with residual disease on CT following chemo, but resection showing no viable tumour

**Risk is intermediate between follow-up protocols F and H**

**All dates are from completion of chemotherapy/ resection of residuum**

| **G** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Immediately following chemo | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 2-monthly | 6 | 6, 12mths | 2 | 4, 8mths | 2 |
| Year 2 | 3-montly | 4 | 18, 24mths | 2 | 15mths | 1 |
| Year 3 | 3-montly | 4 | 36mths | 1 | 30mths | 1 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 54, 60mths | 2 | | 0 | 54, 60mths | 2 |
| Years 6-10 | Annual | 5 | | 0 | Annual | 5 |
| Total | | 23 | | 6 | | 13 |

**Discharge at 10yrs**

Notes:

1) See also notes above on CT scans (p2)

# Follow-up protocol H

Indications: a) Metastatic NSGCT with residual disease post-chemo and resection specimen showing viable tumour other than Teratoma Differentiated
b) relapsed patients with no evaluable disease on CT scan following 2nd-line chemo

**NB A separate follow-up protocol (J) applies to patients whose resection specimen contains viable Teratoma Differentiated (Mature Teratoma)**

## All dates are following final treatment modality (surgery or chemo, as appropriate - some patients will have had "adjuvant chemo" following surgery)

| **H** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Immediately following chemo | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | Monthly | 12 | 6, 12mths | 2 | 3, 9mths | 2 |
| Year 2 | 2-monthly | 6 | 24mths | 1 | 16, 20mths | 2 |
| Year 3 | 3-monthly | 4 | 36mths | 1 | 30mths | 1 |
| Year 4 | 3-monthly | 4 | | 0 | 42, 48mths | 2 |
| Year 5 | 6-monthly | 2 | | 0 | 54, 60mths | 2 |
| Years 6-10 | Annual | 5 | | 0 | Annual | 5 |
| Total | | 33 | | 5 | | 14 |

**Discharge at 10yrs**

Notes:

1) This is a protocol for patients at **high risk of dying** of their disease.

2) See also notes above on CT scans (p2)

# Follow-up protocol J

Indications: a) Metastatic NSGCT with residual disease on CT scan post-chemo and resection specimen showing viable tumour containing Teratoma Differentiated

**NB A separate follow-up protocol applies to patients whose resection specimen contains viable tumour other than Teratoma Differentiated (H) , and who are at higher risk of dying of their disease**

**All dates are following resection of residual mass**

| **J** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR* | |
| | Freq | No | Freq | No | Freq | No |
| | | | Immediately following chemo | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 2-monthly | 6 | 6, 12mths | 2 | 4, 8mths | 2 |
| Year 2 | 3-monthly | 4 | 24mths | 1 | 18mths | 1 |
| Year 3 | 4-monthly | 3 | 36mths | 1 | 32mths | 1 |
| Year 4 | 42, 48mths | 2 | | 0 | 42, 48mths | 2 |
| Year 5 | 60mths | 1 | 60mths | 1 | | 0 |
| Years 6-10 | Annual | 5 | | 0 | Annual | 5 |
| Total | | 21 | | 6 | | 11 |

**Discharge at 10yrs**

***NB CXR policies will not be implemented until agreement has been reached with Radiology Dept**

Notes:

1) See also notes above on CT scans (p2)

2) Some of these patients will have had multiple relapses. This protocol should be **re-started** after **each** resection of TC

# Follow-up protocol K

Indications: a) Spermatocytic seminoma

**All dates are from date of orchidectomy**

| **K** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 4, 8, 12mths | 3 | | 0 | 12mths | 1 |
| Year 2 | 18, 24mths | 2 | | 0 | 24mths | 1 |
| Year 3 | 30, 36mths | 2 | | 0 | | 0 |
| Year 4 | | 0 | | 0 | | 0 |
| Year 5 | | 0 | | 0 | | 0 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 7 | | 1 | | 2 |

**Discharge at 3 years**

Notes:

1) Only CT scan is base-line scan immediately after orchidectomy

# Follow-up protocol L

Indications: a) Sex cord stromal tumours
Sertoli cell tumours
Leydig cell tumours

**All dates are from date of orchidectomy**

| **L** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 3, 6, 9, 12mths | 4 | 6, 12mths | 2 | 9mths | 1 |
| Year 2 | 18, 24mths | 2 | | 0 | 24mths | 1 |
| Year 3 | 36mths | 1 | | 0 | 36mths | 1 |
| Year 4 | | 0 | | 0 | | 0 |
| Year 5 | | 0 | | 0 | | 0 |
| Years 6-10 | | 0 | | 0 | | 0 |
| Total | | 7 | | 3 | | 3 |

**Discharge at 3yrs**

Notes:

1) FSH, LH, oestradiol and testosterone blood tests should be performed at each visit

2) These tumours rarely metastasise. When they do, mets tend to occur early and be in liver. Hence, emphasis is on non-CXR follow-up in 1st year

3) Mets are rarely chemo-sensitive; management is usually surgical, with chemotherapy as a "last resort"

4) See also notes above on CT scans (p2)

# Follow-up protocol M

Indications: Following high-dose chemotherapy

## All dates are following return of stem cells

| M | | | | | | |
|---|---|---|---|---|---|---|
| | OPD* | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Immediately following chemo | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | Monthly | 12 | 12mths | 1 | 4, 8mths | 2 |
| Year 2 | 2-monthly | 6 | 24mths | 1 | 16, 20mths | 2 |
| Year 3 | 3-monthly | 4 | | 0 | 30mths | 1 |
| Year 4 | 3-monthly | 4 | | 0 | 42mths | 1 |
| Year 5 | 6-monthly | 2 | | 0 | 60mths | 1 |
| Years 6-10 | Annual | 5 | | 0 | Annual | 5 |
| Total | | 33 | | 3 | | 12 |

**Discharge at 10yrs**

Notes:

1) This protocol is similar to Protocol H, but has less aggressive follow-up as relapse will inevitably be incurable, and those who are relapse free at 24 months are likely to be long-term survivors

2) See also notes above on CT scans (p2)

3) *Additional tests are required at each visit in this group to account for additional toxicities of high-dose chemotherapy
    a. FBC (risk of secondary leukaemia)
    b. Thyroid function tests
    c. Sex hormone profile
    d. Additional investigations according to symptoms (e.g. pulmonary function tests and cardiac echocardiogram)

# Follow-up Protocol N

Indications: a) Poor prognosis NSGCT treated within the TE23 protocol

**All dates are from completion of protocol chemotherapy treatment**

| **N** | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | *CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Immediately following chemo | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | 2 monthly | 6 | | 0 | 2 monthly | 6 |
| Year 2 | 3 monthly | 4 | | 0 | 3 monthly | 4 |
| Year 3 | 6 monthly | 2 | | 0 | 6 monthly | 2 |
| Year 4 | 6 monthly | 2 | | 0 | 6 monthly | 2 |
| Year 5 | 6 monthly | 2 | | 0 | 6 monthly | 2 |
| Years 6-10 | Annual | 5 | | 0 | Annual | 5 |
| Total | | 21 | | 1 | | 21 |

**Discharge at 10yrs**

Notes:

1) *CT to include chest, abdo, pelvis.
    a. Additional CT's will be undertaken to follow residual disease 6 monthly until resolution (<1cm), resected or stable for 1 year
    b. At physicians discretion
    c. 2 months following surgical resection of tumour masses

2) Follow-up from Year 6- 10 is at the discretion of the physician

3) The following tests will be performed at 12 months from randomisation:
    a. Audiometry
    b. Lung Function

4) Semen analysis at 24 months from randomisation (if performed at randomisation), repeated at year 3 and 5 if oligo or azoospermia <10 million per ml

# TEMPLATE

**All dates are from completion of primary treatment**

| | | | | | | |
|---|---|---|---|---|---|---|
| | OPD | | CT scan | | CXR | |
| | Freq | No | Freq | No | Freq | No |
| | | | Base-line | 1 | No base-line CXR unless pulmonary abnormalities on base-line CT chest | |
| Year 1 | | | | | | |
| Year 2 | | | | | | |
| Year 3 | | | | | | |
| Year 4 | | | | | | |
| Year 5 | | | | | | |
| Years 6-10 | | | | | | |
| Total | | | | | | |

University Hospitals of Leicester NHS
NHS Trust

**Leicester Royal Infirmary**
Leicester
LE1 5WW

Tel: 0116 2541414
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Monicom: 0116 2586878

# East Midlands Penile Cancer Supra Network MDT Operational Policy

This Operational Policy has been agreed between:

| | |
|---|---|
| Position: | MDT Lead Clinician |
| Name: | Mr Duncan Summerton |
| Organisation: | University Hospitals of Leicester NHS Trust |
| | |
| Position: | Trust Cancer Lead Clinician |
| Name: | Dr Nicky Rudd |
| Organisation: | University Hospitals of Leicester NHS Trust |
| Date Agreed: | 16 September 2009 |

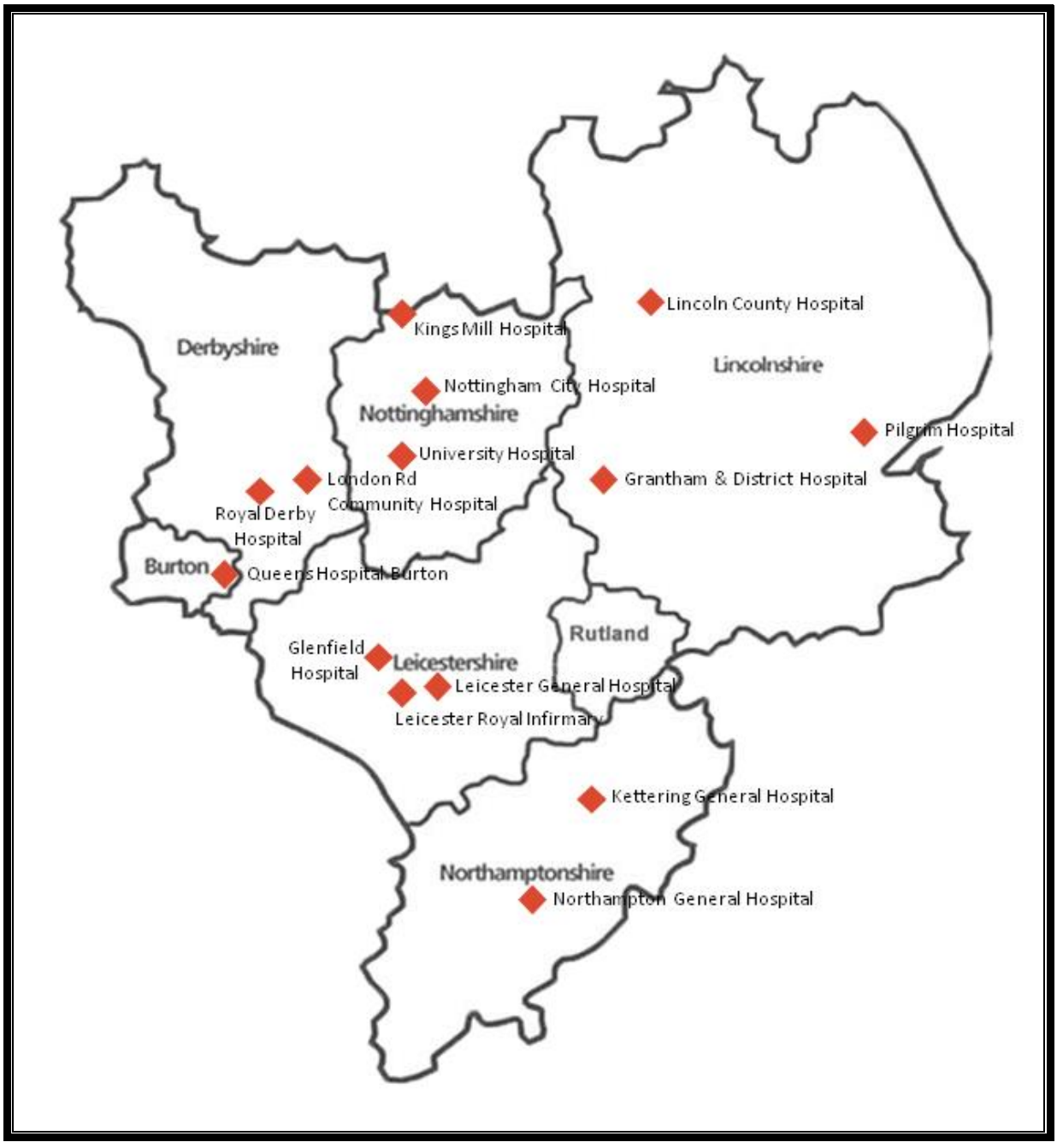
MDT Members agreed the Operational Policy on:

| | |
|---|---|
| Date: | 16 November 2009 |
| Operational Policy Review Date: | May 2012 |

| Evidence | Measure No |
|---|---|
| **Introduction**<br><br>The East Midlands Penile Cancer Supra Network is a multi- professional group which serves a population of 6.5 million and has been in existence since 2005, Peer reviewed shortly after its inception in 2006.<br><br>The Supra Network covers the area from Warwick in the West to Boston in the East, Chesterfield in the North, to Northampton in the South (see Figure 1 – map of region).<br><br>This document outlines the operational policy which will be kept under regular review by Supra Network and discussed at the Annual Regional Meeting.<br><br>The Supra Network records and discusses all referred cases of penile cancer from the region.<br><br>East Midlands Penile Cancer Supra Network is absolutely committed to providing the very best possible multidisciplinary care available to all patients with penile cancer, whatever the severity of disease burden. | |
| **Purpose of the MDT**<br><br>• Ensuring a co-ordinated, rational and evidence-based approach to the treatment of all patients who develop penile cancer.<br>• Guaranteeing that designated specialists work effectively together in teams, such that decisions regarding all aspects of diagnosis, treatment and care of individual patients and decisions regarding the team's operational policies are entirely multidisciplinary.<br>• Ensuring that care is given according to recognised NSSG guidelines/IOG compliance with appropriate information being collected to inform clinical decision-making and to support Clinical Governance and the undertaking of regular audit at both local and NSSG level.<br>• Ensuring that mechanisms are in place to support entry of eligible patients into clinical trials, subject to patients giving fully informed consent. | |
| **MDT Leadership**<br><br>The Lead Clinician for East Midlands Penile Cancer Supra Network MDT is Mr Duncan Summerton. This has been agreed with the Trust's Lead Cancer | **11-2G-403** |

| | |
|---|---|
| Clinician. Mr Summerton's responsibilities are as follows:<br>▪ Leading the clinical activity of Penile Cancer MDT by working to agreed guidelines, ensuring a high-quality, integrated service which meets local, regional and national standards<br>▪ Ensuring that designated specialists work effectively together in teams, such that decisions regarding all aspects of diagnosis, treatment and care of individual patients and decisions regarding the team's operational policies are multidisciplinary decisions<br>▪ Ensuring mechanisms are in place to support entry of eligible patients into clinical trials, subject to patients giving fully informed consent<br>▪ Ensuring that the target of 100% of cancer patients discussed at Penile Cancer MDT is met<br>▪ Ensuring that care is given according to recognised guidelines with appropriate information being collected to inform clinical decision-making and to support clinical governance/audit<br>▪ Ensuring that the Penile MDT meeting and the team meet Peer Review measures<br>▪ Ensuring attendance levels of core members are maintained, in line with Quality Measures<br>▪ Leading on, or nominating a lead for service improvement<br>▪ Organising and chairing annual meeting with the objective of examining the function of the team and reviewing operational policies and collating any activities that are required to ensure optimal functioning of the team<br>▪ Ensuring that Penile MDT's activities are audited and the results documented<br>▪ Ensuring that the outcomes of the meetings are clearly recorded and clinically validated and that appropriate data collection is supported<br>▪ Ensuring that the Penile MDT engages in the Urology Network Site Specific Group (NSSG) and contributes to its work<br>▪ Establishing an audit programme and review of outcomes (including audits carried out across East Midlands Cancer Network)<br>▪ Producing an Annual Report, with the support of the Cancer Management Team<br>▪ Producing an annual Work Programme, which outlines plans for the forthcoming year, in relation to service improvement and actions to achieve compliance with matters arising from previous Peer Review | |

Figure 1 - Map of the East Midlands Penile Cancer Supra Network MDT catchment area, including the geographical location of the satellite hospitals



## Core Membership Structure

The UHL core membership is as follows:

| Name<br>Core Membership | Job Title | Name<br>Cover |
|---|---|---|
| ***Mr Jonathan Goddard*** | Consultant Urological Surgeon | ***Mr Tim Terry/SpR*** |
| ***Mr Tim Terry*** | Consultant Urological Surgeon | ***Mr Duncan Summerton/SpR*** |
| ***Mr Duncan Summerton – Lead Clinician*** | Consultant Surgeon responsible for performing lymph node dissections and/or penile reconstruction | ***Mr Tim Terry/ SpR*** |
| ***Dr Paul Symonds*** | Clinical Oncologist | ***Dr Subramaniam Vasanthan*** |
| ***Dr Steve Nicholson*** | Medical Oncologist | ***Specialist Registrar*** |
| ***Dr Nick Mayer*** | Histopathologist | ***Dr Mark Bamford*** |
| ***Dr Rajesh Arumugam*** | Radiologist | ***Dr Yvonne Rees*** |
| ***Ms Kate Moody*** | Urology Nurse Specialist | ***Ms Lisa Corbitt*** |
| ***Ms Dawn Cave*** | MDT Co-ordinator | ***Ms Branka Torbica*** |
| ***Ms Kate Moody*** | Nomination from above with specific responsibility for user issues and patient/carer information | ***Ms Lisa Corbett*** |
| ***Dr Steve Nicholson*** | Nomination from above to ensure recruitment into clinical trials | ***Mr Duncan Summerton*** |
| Extended Membership | | |
| ***Ms Kate Moody*** | Counsellor | N/A |
| ***Dr Christine Cordle*** | Psychosexual Counsellor | N/A |
| ***Dr Alex Mitchell*** | Psycho-oncology Counsellor | N/A |
| ***Dr Caroline Cooke*** | Specialist Palliative Care Team member | N/A |
| ***Mr Graham Offer*** | Plastic/reconstructive Surgeon | N/A |

**11-2G-401**

**11-2G-409**

Core members or their cover are expected to attend at least two-thirds of MDT meetings. Core members will agree an individual who will, in general, be expected to cover the MDT meeting, in his/her absence.

### Satellite Hospital Membership

| Nottingham University Hospitals NHS Trust | |
|---|---|
| ***Mr Duncan Harris*** | ***Consultant Urologist*** |
| ***Eleanor Robinson*** | ***Urology Nurse Specialist*** |
| Derby Hospitals NHS Foundation Trust | |
| ***Mr Stephen Thomas*** | ***Consultant Urologist*** |
| ***Mr Simon Williams*** | ***Consultant Urologist*** |
| ***Mr Huw Williams*** | ***Consultant Urologist*** |
| ***Bev Baxter*** | ***Clinical Nurse Specialist*** |
| Northampton General Hospital NHS Trust | |
| ***Mr John Potter*** | ***Consultant Urologist*** |
| ***Mr Richard Bell*** | ***Consultant Urologist*** |
| ***Mr Roger Kunkler*** | ***Consultant Urologist*** |
| ***Mr Marek Miller*** | ***Consultant Urologist*** |
| ***Pam Ferrar*** | ***Clinical Nurse Specialist*** |
| Kettering NHS Foundation Trust | |
| ***Mr Roland England*** | ***Consultant Urologist*** |
| ***Ms Janine Cullen*** | ***Clinical Nurse Specialist*** |
| United Lincolnshire Hospitals NHS Trust | |
| ***Mr Pallon Daruwala*** | ***Consultant Urologist*** |
| ***Mr Haradikar Varadaraj*** | ***Locum Consultant Urologist*** |
| ***Ms Paula Keightly*** | ***Clinical Nurse Specialist*** |
| University Hospital Coventry and Warwick NHS Trust | |
| ***Mr Ken Desi*** | ***Consultant Urologist*** |

Lead Clinicians from the satellite hospitals, or their cover, are expected to attend all MDT meetings where that satellite hospital has a patient(s) on the agenda.

Outlying Communities

Patients living in the outlying communities which surround the satellite hospitals, are

represented as follows:

| Outlying Community | Representative Trust |
|---|---|
| Boston | United Lincolnshire Hospitals NHS Trust |
| Burton | Derby Hospitals NHS Foundation Trust |
| Coventry, Nuneaton and Warwick | University Hospital Coventry and Warwick NHS Trust |
| Mansfield | University Hospitals of Nottingham NHS Trust. |

***Consultants performing lymph node dissections and/or penile reconstruction*** **11-2G-403**

Consultants responsible for performing lymph node dissections and/or penile reconstruction, will be core members of the East Midlands Penile Cancer Supra Network MDT.

## Operational Policies

Written follow-up arrangements between the satellite hospitals and the host site have been agreed. The written follow-up arrangements have also been endorsed by the EMCN NSSG. **11-2G-406**

The guidelines are included in the European Association of Urology 2009 – Guidelines on Penile Cancer – Pages 27 to 28. These guidelines can be located under Measure No 412 in the evidence folder.

***Joint Meeting***

Patients with early (Stage 1) penile cancer are offered a joint meeting with the surgeon, oncologist and specialist nurse to discuss treatment options prior to deciding which modality of treatment to use. **11-2G-407**

Mr Duncan Summerton, Dr Steve Nicholson (medical oncologist) and Ms Kate Moody (clinical nurse specialist) run parallel clinics in Outpatients 2 at the Leicester General Hospital on Thursday mornings.

This arrangement provides the opportunity to implement the above policy, in conjunction with the provision of the aforementioned clinics.

***Lymphadenectomy and penile reconstruction carried out on one single site*** **11-2G-408**

The following procedures will be carried out solely at the host site, namely, Leicester General Hospital.

- Lymphadenectomies

| | |
|---|---|
| ▪ Penile reconstructions | |
| ***Key Worker***<br><u>Policy</u><br>According to the NICE palliative care guidance, a key worker is a person who, with the patient's consent and agreement, takes a key role in co-ordinating the patient's care and promoting continuity, ensuring the patient knows who to access for information and advice.<br><br>Within each multidisciplinary team, the identified key worker will be the clinical nurse specialist. He or she will lead on patient communication issues and co-ordinate the patient's pathway for individuals referred to the team.<br><br><u>Implementation at UHL</u><br>The UHL Key Worker policy is adopted, but not the Patient Information Checklist proforma. The patients are informed verbally and given the written contact details of the Clinical Nurse Specialist. This is written and recorded in the patient's notes, although without using the term "key worker".<br><br><u>Handover</u><br>If a patient has been referred to the host site from one of the satellite hospitals, a phone call will take place between the CNS from the referring hospital to the CNS at the host site, in order for facilitate a handover of the key worker role.<br><br><u>Recording of Key Worker</u><br>The Clinical Nurse Specialist's name will be written in the patient's case notes and he or she will be responsible for informing the patient about the role of a key worker<br><br>It will be the responsibility of the key worker to nominate a different healthcare professional to act as the key worker depending on the needs of the individual patient.<br><br>The UHL Key Worker Policy is provided in the evidence folder.<br>**MDT Nurse Specialist Measures** | - |
| ***Completed programme of study***<br>Mrs Kate Moody has successfully completed her Nursing Studies and achieved a | - |

| | |
|---|---|
| total of 240 credits.<br>Mrs Moody's certificates of study are provided in the evidence folder. | |
| ***List of responsibilities for the Clinical Nurse Specialist***<br>The list of responsibilities of the Clinical Nurse Specialists, as agreed by Mr Duncan Summerton and Kate Moody, are as follows:<br>• Acting as key worker for patients/carers as outlined in the Trust's Key Worker Policy<br>• Working as an integral member of the multi-disciplinary team to ensure continuity of patient care<br>• Initiating and participating in MDT discussions and case conferences with all professionals involved in the delivery of patient care<br>• Communicating and co-ordinating information to patients and carers, evaluating their levels of understanding and utilising a range of skills/techniques to overcome any communication difficulties.<br>• Acting as an advocate for the patient, who has or may have cancer<br>• Providing patients with comprehensive information on the options available to them for treatment and care.<br>• Keeping updated of any relevant clinical trials within Urological Cancer<br>• Utilising specialist knowledge and skills regarding disclosure of information.<br>• Co-ordinating the onward referral of patient and/or family members to appropriate clinical or support services.<br>• Ensuring accurate follow-up documentation is maintained, including notification if the named Key Worker has been changed<br>• Utilising support strategies and interventions available, initiating appropriate referrals when caring for patients with complex need, e.g. patient exhibiting denial/anger following a cancer diagnosis, adverse reaction to alteration in body image<br>• Demonstrating knowledge of holistic cancer care relating to areas such as screening, curative and palliative treatment, spiritual care, aspects of nutrition and pharmacology, rehabilitation, discharge and collaborative working<br>• Assessing patients throughout their journey on their physical, social and occupational needs, psychological well-being and spiritual well-being<br>• Utilising all forms of patient information to enable the patient to have a | - |

| | |
|---|---|
| better understanding of their diagnosis and treatment plan. This will include the use of specific resourced for patients/carers from minority groups<br>• Facilitating the development of teaching and learning skills used to educate patients and other personnel<br>• Contributing to the monitoring, audit and evaluation of adherence to policy/procedures/guidelines and standard of practice, initiating changes where appropriate to improve delivery of care to patients/carers within the MDT<br>• Demonstrating a comprehensive knowledge of the assessment, care, management support, training education and information requirements for patients receiving chemotherapy or radiotherapy and their carers and treatment for related complications across the care pathway for the particular speciality area<br>• Assessing and providing support that is appropriate to the context and sensitive to meet the patient/carer and/or family's needs, facilitating access to additional support from other healthcare professionals or agencies as applicable and with the agreement of the patient and/or carer<br>• Understanding the ethical issues relating to the treatment in advanced disease<br>• Having sufficient knowledge and links with national/local support groups and be able to provide/record information relating to these groups to guide and advise patients<br><br>• Providing information, education and relevant telephone contacts to patients and carers regarding procedures and side effects of chemotherapy and general radiotherapy such as fatigue and skin reactions<br>• Demonstrating knowledge of the management of common side effects for treatment associated with the client group encountered in their practice<br>• Maintaining awareness of local contact arrangements in the event of patients experiencing unwanted side-effects<br>• Demonstrating knowledge to prepare, inform and education patient/carers for survivorship and where applicable, primary care personnel regarding any associated care requirement, symptom management and contact details on discharge<br>• Participating in inter-professional/inter-agency evaluation and audit to effect change for the continued improvement of the quality of care and service for | |

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| patients | |
| **Functions of the Team – Providing Patient-centred Care**<br>***Patient Information***<br>The MDT provides patients and carers with written material. Examples are located in the evidence file and also available at the Cancer Information Centre, Osborne Building, LRI. The following written information booklets/audio visuals are available to patients and carers, both in hard copy and online and they can also be obtained in a different language or format by contacting Ms D Baker, Service Equality Manager on 0116 258 4382<br>• Penile Cancer Patient Information Pathway<br>o Urology Patient Information Update June 2009<br>o Penile cancer information Pathway<br>o Day Case Penile Biopsy (General Anaesthetic)<br>o Day Case Penile Biopsy (Local Anaesthetic)<br>o Information for patients having a MRI Scan<br>o Information for patients having computerd tomography (CT) Scan<br>o Day Case Circumcision (Local Anaesthetic)<br>o Day Case Circumcision (General anaesthetic)<br>o Cancer Backup – Cancer of the Penis<br>o Cancer Research business card<br>o UHL Your Local Cancer Services<br>o Surgery for Cancer of the Penis<br>o Chemotherapy/Radiotherapy<br>o Understanding clinical Trials<br>o Leicester Cancer Centre Macmillan Cancer Info Centre<br>o Macmillan – Money Worries?<br>o Coping with Cancer - support leaflet<br>o Hospital Macmillan Specialist Palliative Care Team<br>Examples of patient information are provided in the evidence folder. | **410** |
| ***Patient Awareness of Right to receive Copy Letter***<br>All penile cancer patients are given the opportunity to receive a permanent record of their consultation<br>• Since 7 January 2008, a sentence has been included in all new and follow-up penile cancer outpatient invitation letters stating that, if patients wish a | **-** |

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| copy of the letter which will be sent to the GP following their consultation, then they should inform the doctor.<br>• When attending penile cancer outpatients, there is a notice on the wall of waiting areas stating that patients can request a copy of the GP letter if they so wish.<br>• Dr Steve Nicholson offers patients a copy of their letter, at their consultation.<br><br>Many of the patients' information leaflets explain the patients' treatment, options and details of their follow-up. Doctors often write additional notes directly onto the information that is provided to patients.<br><br>A sample outpatient appointment letter is provided in the evidence folder. | |
| **MDT Discussion and Treatment Planning Decision**<br>The details of all new penile cancer cases within the region are faxed, or emailed, on a standard proforma, to the host site. A management plan, usually based on the EAU guidelines, is then formulated and conveyed to the originating unit by fax, email or telephone conversation within 48 hrs. This ensures rapid standardised treatment of this disease throughout the network without having to wait until the next MDT. All cases referred to UHL are then discussed formally at the monthly Supra Network MDT meeting via a teleconferencing system.<br><br>The Lead Clinician, of the host site, dictates the treatment planning decisions as part of a letter to the treating consultant, which is typed and produced by the Lead Clinician's secretary.<br><br>These letters are posted to consultants and a copy of the letter is kept in the patient's file.<br><br>The MDT Co-ordinator, of the host site, receives a copy of the letter via email, when the outcome is copied and pasted from the letter into the PATS (Patient Administration Tracking System) database.<br><br>The MDT Co-ordinator, of the host site, then forwards the outcomes on to the other MDT Co-ordinators across the Supra Network.<br><br>The MDT Co-ordinator keeps plastic wallets for each patient discussed at | **411** |

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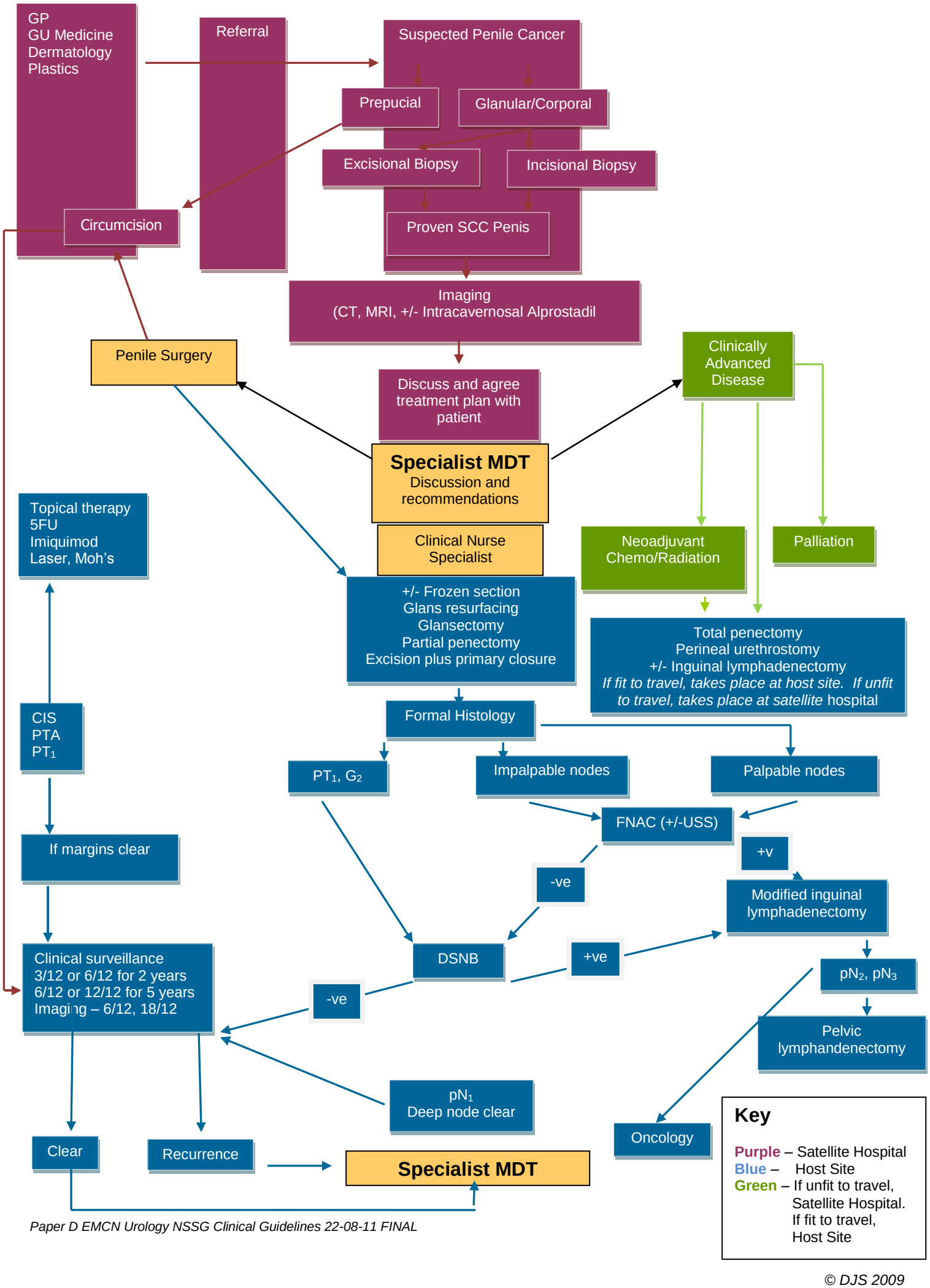
| Supra Network MDT meetings, by alpha-surname order in the MDT Co-ordinator's office. This record also includes letters and the agenda for each patient. A copy of the MDT letter is also included.<br><br>When a patient is discussed at the MDT meeting, the MDT Co-ordinator retrieves the plastic wallet or makes up a new one, if there is not one available. This is then handed to the Lead Clinician, of the host site, along with the patient's notes, ready for the next MDT.<br><br>A sample of the Minutes, taken from a Supra Network MDT meeting, is provided in the evidence folder. | |
| **Network Guidelines**<br>Supra Network/EMCN-agreed clinical guidelines for penile cancer are located in the evidence file.<br>Supra Network/EMCN-agreed referral guidelines from the satellite hospitals to the host site are located in the evidence file. The referral pathway is provided on Page 13. | **412**<br><br>**413** |
| **Data Collection**<br>The NSSG agreed, formally, that the Network-wide Minimum Data Set would be the data fields required for:<br>▪ BAUS<br>▪ Cancer Waiting Times<br>▪ Cancer Registry<br>▪ Clinical Information Analysis Project<br>This was agreed at the EMCN Urological Cancer NSSG on Friday 19 June. Minutes of the meeting are provided in the evidence folder. | **414** |

# Penile Cancer – Administrative Guidelines



**Assessment at UHL**

- Urgent outpatient review (weekly slots)
- Options for conservative therapy outlined (surgery available at weekly session if indicated)
- Clinical staging including SLNB
- Review of histology
- MRI imaging of penis(with alprostadil) and pelvis
- CXR
- Review and appointment with uro-oncology nurse specialist
- Patient information and discussion of likely management with urologist or CNS

**Treatment Guidelines**

EMPCAN recognises and uses the European Association of Urology Guidelines on Penile Cancer.

**Carcinoma in situ (Tis) :** Penis-preserving strategy recommended - local excision, laser therapy, topical Rx all valid. Depends upon availability and preference of patient after discussion with the clinician.

**Ta-1, G1-2 (impalpable nodes) :** Local excision (using frozen section to assure clearance) plus reconstructive surgery with skin grafting
lymph node sampling should be considered and discussed (esp. in T1G2)

**T1 G3 (impalpable nodes):** Local excision (frozen section), skin graft and reconstruction. Modified inguinal lymph node dissection i.e. preservation of the long saphenous vein and 2cm inward reduction of the lateral and inferior boundaries of the radical lymphadenectomy (synchronous or staged).

**T1 (palpable nodes):** Modified inguinal lymphadenectomy (with frozen section)
If deep node positive – continue to radical/classical inguinal clearance – i.e. clear all nodes from inguinal ligament above to the adductors medially, sartorius laterally, floor being the femoral vessels.

**T2,3,4:** Local excision (with clear margins by frozen section. Partial penectomy
Total penectomy, +/- inguinal lymphadenectomy with phallic reconstruction (pubic or radial forearm)

**Pelvic Nodes:** The role of pelvic lymphadenectomy is uncertain. It should be performed in cases where there are more than two positive inguinal nodes on that side, or when extracapsular invasion has been seen in the inguinal histology.

When inguinal involvement with 'positive' pelvic imaging is seen, there is a case for induction chemotherapy, followed by lymphadenectomy when a partial or complete response has been achieved.

**Recurrent disease:** If, after conservative therapy, CP recurs, then a second conservative procedure should be considered, providing there is no pre-operative radiological or intra-operative evidence of corporal involvement.

**Recent Introduction:** Dynamic sentinel lymph node biopsy (DSNB) with formal blue and radioisotope 99m Technicium is a very promising way of exposing only selected cases to the considerable morbidity of lymphadenectomy in the higher certainty of the procedure conferring clinical and survival benefits. This technique is under introduction.

**Follow-up:** An extremely important part in the management of this disease, this should be guided by histological stage, but with patient factors such as age, general health and compliance taken into account.

In cases with initially impalpable nodes, the development of palpable nodes represents metastases.

| | |
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| T1 | Clinical review and examination 3 monthly for 3 years |
| T2, 3 | as above plus CT/MRI pelvis annually |

**General Considerations:** It is hoped that this operational policy provides a method of improving and standardising the care given to men suffering this rare but potentially rapidly fatal disease. It should develop with the collection of regional and national data and with the use of carefully constructed clinical trials. It is predicted that this document will be revised every 2 years.

**Surgical opportunities:** Surgeons outside of UHL wishing to take advantage of a hub/spoke system and co-work with the surgery taking place at UHL are actively encouraged to participate.

## APPENDIX G Counseling for T2 Invasive Bladder Cancer and Organ Confined Prostate Cancer

**Measure 11-1A-208g**

**Timing of Counselling:**

- At the time of diagnosis
- Follow-up if indication of relapse
- At any time the patient seeks advice

Literature for patents to take with them at the time of counselling is available on all sites.

**1. T2 Muscle Invasive Bladder Cancer:**

In the UK the traditional treatment for these cases has been radiotherapy (RT) followed by salvage cystectomy for patients with post irradiation recurrence or persistence of invasive disease.

In the USA and parts of Europe primary cystectomy has been more commonly practised with RT reserved for patients unfit or unwilling to undergo cystectomy.

These two approaches have not been subjected to randomised controlled trial on an intention-to-treat basis.

Patients should be able to discuss fully the likely outcomes of surgery (with or without reconstruction) as compared to radical pelvic radiotherapy and come to an informed decision on the treatment modality to be employed in his/her individual case. A realistic assessment of local results and the side-effects of these modalities is critical to this discussion.

(Stein JP, Lieskovsky G, Cote R *et al.* Radical Cystectomy in the treatment of invasive bladder cancer: long-term results in 1054 patients. J Clin. Oncol., 2001:19:666)

**Designated Teams**:

UHL: Surgery – Mr R Kockelbergh, Mr JK Mellon; Oncology- Dr S Vasanthan, Dr P Symonds: CNS – Ms Kate Moody

Northampton: Surgery: Mr R Bell, Mr R Kunkler; Oncology - Dr C Elwell, CNS – Ms P Ferrar

Kettering: Surgery - Mr Al Sudani; Oncology – Dr P Camilleri ; CNS - Ms J Cullen

Nottingham: Surgery - Mr O Cole : Oncology: Dr I Hennig; CNS: Ms E Robinson

Kings Mill: Surgery – Mr D Burke; Oncology; CNS:

United Lincoln: Surgery: Mr N Dahar; Oncology: Dr T Sreenivasan; CNS: Ms P Keightley

Derby: Surgery: Mr S Thomas; Oncology: Dr P Chakraborti; CNS: Ms B Baxter

Burton: Surgery: Mr J Shah; Oncology: Dr P Chakroborti: CNS: Ms L Lane

## 2. Organ confined prostate cancer

Patients should have written information about the options available: active surveillance, hormone therapy, radical surgery, conformal radiotherapy or brachytherapy.

The choices most suitable will be influenced by age, life-expectancy and co-morbidity

Patients who are considering radical surgery, conformal radiotherapy or brachytherapy should have the opportunity to discuss the individual treatment with a specialist experienced in performing that particular treatment.

- Active Surveillance:

Advantages: Radical treatment and the ensuing risk of side effects are delayed temporarily or permanently. Should still allow for delayed successful radical intervention if carefully monitored.

Disadvantages: May increase psychological morbidity. Potential to reduce chance of curative therapy if the tumour undergoes stage or grade progression.

- Hormone Therapy (Surgical castration, LHRH agonist or antiandrogen):

Advantages: Simple to administer and generally well tolerated. Is effective in suppressing prostate cancer in ~85% of men. Avoids risk of undergoing surgery or radiotherapy in the short to medium term.

Disadvantages: Anticipated as non-curative in those with a long life-expectancy. Treatment life-long. Side-effects osteoporosis, hot flushes, gynaecomastia, potential increase in cardiovascular mortality, loss of libido and depression

- Surgery

Advantages: Obtain more detailed histopathological information including nodes which may provide information on adjuvant treatment needs. Failure to clear local disease can be followed by radical radiotherapy. PSA monitoring easier.

Disadvantages: Major procedure with risk of complications and mortality. he risk of impotence significant even with nerve-sparing techniques. There is a risk of urinary incontinence.

- Radical conformal radiotherapy:

Advantages: Potentially curative treatment that does not require anaesthetic. Urinary incontinence negligible.

Disadvantages: Treatment is prolonged. Not suitable for patients with proctitis or previous pelvic radiotherapy. Radiation proctitis is a recognised complication. 30% of men become impotent. Salvage treatment for local recurrence limited.

- Prostate brachytherapy:

Advantages: Requires feer visits than conformal RT. Faster post-operative recovery in comparison to radical prostatectomy. Level of fitness for treatment less than for radical surgery.

Disadvantages: Acute urinary morbidity is common, especially in those with pre-existing obstructive symptoms. Requires an anaesthetic. Patients with large prostate will require neo-adjuvant hormonal treatment and may not ultimately be suitable.

**Designated Teams**:

UHL: Surgery – Mr T Terry, Mr R Kockelbergh, Mr P Butterworth; Oncology- Dr S Vasanthan, Dr P Symonds: CNS – Ms Kate Moody

Northampton: Surgery: Mr R Bell, Mr M Miller; Oncology - Dr C Elwell, CNS – Ms P Ferrar

Kettering: Surgery - Mr Al Sudani; Oncology – Dr G Faust; CNS - Ms J Cullen

Kings Mill: Surgery: Mr A Bhojwani; Oncology: CNS: Ms S Day

United Lincoln: Surgery: Mr N Dahar; Oncology: Dr T Sreenivasan; CNS: Ms P Keightley

Nottingham: Surgery: Mr O Cole; Oncology: Dr I Hennig; CNS: Ms E Robinson

Derby: Surgery: Mr S Thomas; Oncology: Dr P Chakraborti; CNS: Ms B Baxter

Burton: Surgery: Mr J Shah; Oncology: Dr P Chakroborti: CNS: Ms L Lane

**APPENDIX H**

# Urology MDT Penile MDT, Testicular MDT Membership

## KETTERING GENERAL HOSPITAL – LOCAL UROLOGY MDT

| **Urology MDT Core Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Cover** |
| Mr Al-Sudani | Clinical Lead | Mr Sabbagh<br>Mr Payne<br>Mr Al-Sheikh |
| Mr England | Urology Consultant | |
| Mr Khan | Urology Consultant | |
| Janine Cullen | Uro-Oncology Clinical Nurse Specialist | Cover for each other |
| Rachel Hooper | Uro-Oncology Clinical Nurse Specialist | |
| Dr Camilleri/Dr Faust | Specialist Registrar (SPR) | Clinical Oncologist |
| Dr Reeve | Radiologist | Dr S Hamid |
| Dr Uraiby | Histopathologist | Dr S Milkins |
| Sarah Fox | MDT Co-ordinator | Cancer Services |
| Dr S Shah | Palliative Care Consultant | CNS Palliative Care |
| **Extended (Non-Core) Membership** | | |
| Community Palliative Care | Cransley Hospice Ext 4611 | |
| Social Worker | Social Work Department KGH Ext 3356 | |
| Dr Sharon Lord | Psychologist | |
| Welfare Rights | Macmillan Advisors Tel: 01604 678025 | |
| Dietician | Dietetic Dept KGH Ext 2320 | |
| Lesley Lancaster or Julie Smith | Stoma Nurses Ext 4011 | |

## NORTHAMPTON GENERAL HOSPITAL – LOCAL & SPECIALIST MDT

| **Urology MDT Core Membership** | |
|---|---|
| **Name** | **Designation** |
| Mr John Beatty | Consultant Urologist (NGH) |
| Mr C R W Bell | Consultant Urological Surgeon (NGH) Chair – responsible for recruitment into clinical trials |
| Mr R B Kunkler | Consultant Urological Surgeon (NGH) |
| Mr M A W Miller | Consultant Urological Surgeon (NGH) |
| Mr J Potter | Consultant Urological Surgeon (NGH) |
| Mr S Gupta | Staff Grade Urologist (NGH) |
| Mr M Al-Sudani | Consultant Urological Surgeon (Cancer Lead for KGH) |
| Mr R England | Consultant Urolgoical Surgeon (KGH) |
| Mr Z Khan | Consultant Urological Surgeon (KGH) |
| Mr Al-Sheikh | Staff Grade Urologist (KGH) |
| Mr S Sabbagh | Staff Grade Urologist (KGH) |
| Dr C Elwell | Consultant Oncologist (NGH) |
| Dr P Camilleri | Consultant Oncologist (NGH/KGH) |
| Dr G Faust | Consultant Oncologist (NGH) |
| Dr V Sudhakar | Consultant Radiologist (NGH) |
| Dr A Molyneux | Consultant Histopatholist/Cytologist (NGH) |
| Dr R Reeve | Consultant Radiologist (KGH) |
| Dr J Uraiby | Consultant Histopathologist (KGH) |

| Urology MDT Core Membership | |
|---|---|
| **Name** | **Designation** |
| Mr John Beatty | Consultant Urologist (NGH) |
| Dr J Nottingham | Consultant Histopathologist (NGH) |
| Pam Ferrar | Clinical Nurse Specialist / Key Worker – responsible for user issues and information for patients and carers (NGH) |
| Judith Fletcher | Urology Nurse Specialist (NGH) |
| Rachel Hooper | Clinical Nurse Specialist (KGH) |
| Janine Cullen | Clinical Nurse Specialist (KGH) |
| Andrea Clarkson | MDT Co-ordinator / Tracker (NGH) |
| Elizabeth Panter | MDT Co-ordinator / Tracker (KGH) |
| Sarah Fox | MDT Co-ordinator (KGH) |

## UNIVERSITY HOSPITALS OF LEICESTER – LOCAL & SPECIALIST MDT

| Urology MDT Core Membership | | |
|---|---|---|
| **Name** | **Designation** | **Cover** |
| Mr L Griffiths | Consultant Urological Surgeon, Cancer Lead for Urology | All Consultant Urologists cover one another, in additional to their respective SpRs |
| Mr Masood Khan | Consultant Urological Surgeon, Urology MDT Deputy Chairman | |
| Mr R Kockelbergh<br>Prof Killian Mellon<br>Mr D Summerton<br>Mr P Butterworth<br>Mr J Goddard | Consultant Urological Surgeons | |
| Dr Steve Nicholson<br>Dr Paul Symonds<br>Dr S Vasanthan | Consultant Medical Oncologist | All Consultant Oncologist cover one another |
| Dr John Dormer | Consultant Histopathologist | Dr Asma Haider<br>Dr Rebecca Harrison |
| Dr Kevin Mulcahy<br>Dr R Arumugam | Consultant Radiologist | Consultant Radiologist cover each other |
| Mrs Kate Moody<br>Ms Jo Worpley | Urology Nurse Specialist | Mr John Lester |
| Mr John Lester | Prostate Cancer Nurse Specialist | Mrs Kate Moody<br>Ms Lisa Corbitt |
| Ms Dawn Cave / Ms Diane Davies | MDT Co-ordinator | Ms Branka Torbica |
| Ms Kate Moody | Nomination from above with specifica responsibility for user issues and patient/carer information | Ms Lisa Corbitt |
| Mr L Griffiths | Nomination from above to ensure recruitment into clinical trials | Dr Steve Nicholson |
| **Extended (Non-Core) Membership** | | |
| Mr T Terry | Consultant Urological Surgeon | N/A |
| Mr Julia Walkers | NCRN Nurse Research Specilaist | N/A |
| Dr Caroline Cooke | Specialist Palliative Care | N/A |

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| | Team | |
| Ms Branka Torbica | Patient Tracker | N/A |
| Ms Tracey Feltus | Stoma Nurse | N/A |
| Ms Shumikazi Mzazi | CLRN Urology Cancer Research Nurse | |
| Dr Alex Mitchell | Consultant in Liaison Psychiatry (Psycho-oncologist) | |

## UNIVERSITY HOSPITALS OF LEICESTER (HOST SITE) – EAST MIDLANDS PENILE MDT

| **Penile Cancer MDT Core Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Cover** |
| Mr Jonathan Goddard | Consultant Urological Surgeon | Mr Tim Terry / SpR |
| Mr Tim Terry | Consultant Urological Surgeon | Mr Duncan Summerton / SpR |
| Mr Duncan Summerton | Consultant Surgeon responsible for performing lymph node dissections | Mr Tim Terry / SpR |
| Dr Paul Symonds | Clinical Oncologist | Dr Subramaniam Vasanthan |
| Dr Steve Nicholson | Medical Oncologist | Specialist Registrar |
| Dr John Dormer | Consultant Histopathologist | Dr Mark Bamford |
| Dr Rajesh Arumugam | Radiologist | Dr Yvonne Rees |
| Ms Kate Moody | Urology Nurse Specialist | Ms Lisa Corbitt |
| Ms Dawn Cave / Ms Diane Davies | MDT Co-ordinator | Ms Branka Torbica |
| Ms Kate Moody | Monimation from above with specific responsibility for user issues and patient/carer information | Ms Lisa Corbett |
| Dr Steve Nicholson | Nomination from above to ensure recruitment into clinical trials | Mr Duncan Summerton |
| **Extended (Non-Core) Membership** | | |
| Ms Kate Moody | Counsellor | N/A |
| Dr Christine Cordle | Psychosexual Counsellor | N/A |
| Dr Alex Mitchell | Psycho-oncology Counsellor | N/A |
| Dr Caroline Cooke | Specialist Palliative Care Team member | N/A |
| Mr Graham Offer | Plastic / Reconstructive Surgeon | N/A |
| **Penile Cancer Satellite Hospitals Membership Structure** | | |
| **Hospital** | **Name** | **Designation** |
| Nottingham University Hospitals NHS Trust | Mr Duncan Harris | Consultant Urologist |
| | Eleanor Robinson | Urology Nurse Specialist |
| Derby Hospitals NHS Foundation Trust | Mr Stephen Thomas | Consultant Urologist |
| | Mr Simon Williams | Consultant Urologist |
| | Mr Huw Williams | Consultant Urologist |
| | Bev Baxter | Clinical Nurse Specialist |
| Northampton General Hospitals NHS Trust | Mr John Potter | Consultant Urologist |
| | Mr Richard Bell | Consultant Urologist |

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|---|---|---|
| | Mr Roger Kunkler | Consultant Urologist |
| | Mr Marek Miller | Consultant Urologist |
| | Pam Ferrar | Clinical Nurse Specialist |
| Kettering NHS Foundation Trust | Mr Roland England | Consultant Urologist |
| | Ms Janine Cullen | Clinical Nurse Specialist |
| United Lincolnshire Hospitals NHS Trust | Mr Pallon Daruwala | Consultant Urologist |
| | Mr Haradikar Varadaraj | Locum Consultant Urologist |
| | Ms Paula Keightly | Clinical Nurse Specialist |

## SHERWOOD FOREST HOSPITALS NHS FOUNDATION TRUST – LOCAL MDT

| **Urology MDT Core Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Cover** |
| Mr A Bhojwani | MDT Lead /Surgeon | Mr Krishnan Anantharamakrishnan |
| Mr D Bodiwala | Surgeon | Mr Krishnan Anantharamakrishnan<br>Mr S Singh |
| Mr Krishnan Anantharamakrishnan | Surgeon | Mr Ashok Bhojwani |
| Dr Santhanam Sundar | Clinical Oncologist (including chemotherapy) and member of Specialist Urology MDT at Nottingham | Oncology SpR / Dr Saunders |
| Dr Saunders | Clinical Oncologist and member of Specialist Urology MDT at Nottingham | Oncology SpR / Dr Sundar |
| Dr Shafiq Gill | Histopathologist | Dr Abdulla / Dr Abrahaim |
| Dr Christopher Squirrell | Imaging Consultant | Clive Butcher |
| David Johnson | Lead Cancer Nurse Specilaist | Elizabeth Deakin |
| Elizabeth Deakin | Cancer Nurse Specialist | David Johnson |
| Lisa Arrowsmith | MDT Co-ordinator | MDT Co-ordinator Team provide cover |
| David Johnson<br>Elizabeth Deakin | Person specifically responsible for users issues and information for patients and carers user issues | David Johnson<br><br>Elizabeth Deakin |
| Mr S Singh | Surgeon | Mr D Bodiwala<br>Mr A Bhojwani |
| Dr Santhanam Sundar | Person responsible for ensuring recrutiment into clinical trials and other well designed studies | Oncology SpR / Dr Saunders |

## NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST – LOCAL & SPECIALIST MDT

| **Specialist Urology MDT Core Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Cover** |
| Mr O Cole - Lead Clinician<br>Mr D Harriss<br>Mr J Lemberger<br>Mr Hamid<br>Mr Mann | Surgical Urology Consultants | The surgical team cross cover each other<br>Mr G Mann |
| Dr S Sundar<br>Prof Patel | Clinical Oncologists | The clinical oncologist cross cover each other |
| Dr Hulman – Lead<br>Dr T McCulloch | Histopathologists | The Core Histopathologist cross cover |
| S Day<br>K Lakhani<br>E Robinson | Nurse Specialists | |
| Karen Ashton | Data Administrator | |
| Richard Eason | Patient Navigator | |
| **Specialist Urology MDT (Non Core) Extended Membership** | | |
| K Heidukewitsch | Palliative Care Specialist Nurse | |
| Leann Alder | Information Radiographer | |
| Angela Gregory | Psycho-sexual Counselling | |

## UNITED LINCOLNSHIRE HOSPITALS NHS TRUST – LOCAL MDT

| **Urology MDT Core Membership** | |
|---|---|
| **Name** | **Designation** |
| Dr T Sreenivasan - MDT Lead | Consultant Oncologist, Lincoln County Hospital |
| Mr I R Mark | Consultant Urologist, Lincoln County Hospital |
| Mr S Memon | Consultant Urologist, Pilgrim Hospital Boston |
| Mr A D Simpson | Consultant Urologist, Lincoln County Hospital |
| Mr N Dahar | Consultant Urologist, Lincoln County Hospital |
| Mr P Daruwala | Consultant Urologist, Pilgrim Hospital Boston |
| Mr H Varadaraj | Consultant Urologist, Lincoln County Hospital |
| Dr A Sanjrani | Staff Grade – Urology, Pilgrim Hospital Boston |
| Dr Sheikh Nissar | Staff Grade – Urology, Pilgrim Hospital Boston |
| Dr A Coup | Consultant Histopathologist, Lincoln County Hospital |
| Dr P Chaudhri | Consultant Cellular Pathologist, Lincoln County Hospital |
| Dr A Iqbal | Consultant Radiologist, Pilgrim Hospital Boston |
| Dr M Kamal | Consultant Radiologist, Lincoln County Hospital |
| Dr M P Panades | Consultant Oncologist, Lincoln County Hospital |
| Dr K Baria | Consultant Oncologist, Lincoln County Hospital |
| Paula Keightley | Urology Nurse Specialist, Lincoln County Hospital |
| Stephen Whitehead | Urology Nurse Specialist, Lincoln County Hospital |
| Zina Bojin | Urology Nurse Specialist, Lincoln County Hospital |
| Angie Parton | Urology Nurse Specialist, Louth County Hospital |
| Mrs Lee Gilbert | Urology Nurse Specialist, Pilgrim Hospital Boston |
| Gill Rayney | Cancer Pathway Co-ordinator, Lincoln County Hospital |
| Daniella Sharpe | Cancer Pathway Co-ordinator, Pilgrim Hospital Boston |

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| Gemma Freeman | |
| Dr Richard Beable | Locum Consultant Radiologist |

## EAST MIDLANDS TESTICULAR MDT

| **Testicular MDT Core Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Trust** |
| Dr M Sokal – Lead<br>Dr S Nicholson<br>Dr Chakraborti<br>Dr Sreenivasan<br>Dr Ivo Hennig<br>Dr Philip Camilleri<br>Dr Christine Elwell<br>Dr Caroline Humber<br>Dr D Saunders<br>Dr G Faust<br>Dr A Stockton | Clinical Oncologists | Nottingham<br>Leicester<br>Derby<br>Lincoln<br>Nottingham<br>Kettering<br>Northampton<br>Coventry<br>Nottingham<br>Northampton<br>Coventry |
| Mr Lemberger - Lead<br>Mr Kockelbergh | Consultant Urologists | Nottingham<br>Leicester |
| Dr A Manhim<br>Dr B Morgan<br>Dr L Moss | Imaging Specialist Lead | *Replacement tbc*<br>Leicester<br>Northampton |
| Dr O'Conner<br>Dr Gill Turner | Consultant Radiologist | Nottingham<br>Derby |
| Dr G Hulman<br>Prof Furness – Lead<br>Dr Molyneux<br>Dr A Coup | Histopathologists | Nottingham<br>Leicester<br>Northampton<br>Lincoln |
| Mr J Duffy<br>Dr D Waller | Thoracic Surgeons | Nottingham<br>Leicester |
| Nicola Wilshaw | Nurse Specialists | Nottingham |
| Ms K Ashton<br>Ms D Cave<br>Ms B Thomason<br>Ms S Thomas | MDT Co-ordinators | Nottingham<br>Leicester<br>Northampton<br>Coventry |

***MDT split under active review**

**BURTON UROLOGY MDT**

| **Urology MDT Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Trust** |
| Mr J Shah | Consultant Urologist (Lead) | Burton |
| Mr S A Khwaja | Consultant Urologist | |
| Mr M Murugesan | Locum Consultant Urologist | |
| Mr S Saeid | Locum Consultant Urologist | |
| Mr N Sheik | Locum Consultant Urologist | |
| Dr M Palaniappan | Consultant Radiologist | |
| | Consultant Histopathologist-Derby | |
| Dr M Kumar | Consultant Clinical Oncologist | |
| Mrs L Lane | Clinical Nurse Specialist | |
| Mrs S Minns | Clinical Nurse Specialist | |
| Mrs L Tarling | Oncology MDT Co-ordinator | |
| Mrs S Gallagher | Oncology MDT Co-ordinator | |
| Mrs J Tipper | Palliative Care CNS | |
| Extended Team Members | | |
| Mrs A Holden | Urology/Gynaecology Clinical Nurse Specialist | |
| Jean Smith | Stoma Care CNS | |
| Miss A Fisher | Senior Radiographer | |
| Sarah Hathaway-Lees | Research Sister | |
| Mrs R Corfield | Consultant Urologist | |

**ROYAL DERBY UROLOGY MDT MEMBERSHIP**

| **Urology MDT Membership** | | |
|---|---|---|
| **Name** | **Designation** | **Secretary** |
| Mr S A Thomas | Lead Clinician and Urologist | Rachel Boneham<br>X 88075 |
| Mr J H Williams | Urologist | Anna Williamson x 89178 |
| Mr A M Peracha | Urologist | Anna Williamson x 89173 |
| Mr Hari Ratan | Urologist | Ann Williams x 89175 |
| Mr M Henley | Urologist | Angela Marshall x 88078 |
| Mr S Williams | Urologist | Sue Ryan x 88076 |
| Dr P R Chakraborti<br>Dr Kumar | Clinical Oncologist | Susan Feeley x 87429 |
| Dr Manuel Sotres<br>Dr G Van Shalkwyk<br>Dr Trevor Jackson | Histopathologist | Lin Poyser x 89319 |
| Dr G Turner<br>Dr A Lee | Radiologist | |
| Bev H Baxter | Specialist Nurse | X 89159 |
| Natalie K Mart (Responsible for users issues and information for parents and carers) | Specialist Nurse | X 89164 |
| Kathy Keegan O'Kane | Specialist Nurse | X 89519 |
| Sharon Williams | Specialist Nurse | X 89159 |
| Lyn Meekin | MDT Co-ordinator | X 87158 |