Guidelines for the Management of Urological Cancers within North Trent

Version 4.0 May 2013

Produced by the North Trent Urology Group

For Review 1st May 2014
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1.0 Network Teams

The composition of local, specialist and supranetwork teams is as follows;

1.1 Local Teams

<table>
<thead>
<tr>
<th>Location</th>
<th>Lead Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnsley</td>
<td>Mr Patrick Cutinha</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>Mr Mike James</td>
</tr>
<tr>
<td>Doncaster</td>
<td>Mr Sanjeev Pathak</td>
</tr>
<tr>
<td>Rotherham</td>
<td>Mr Zahir Abbasi</td>
</tr>
<tr>
<td>Sheffield</td>
<td>Mr James Catto</td>
</tr>
</tbody>
</table>

1.2 Specialist teams

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Lead Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Oncology</td>
<td>Mr James Catto</td>
</tr>
<tr>
<td>Non-Surgical Oncology</td>
<td>Dr Peter Kirkbride, Dr Cath Ferguson, Dr Jackie Martin, Dr Omar Din, Dr Linda Evans</td>
</tr>
</tbody>
</table>

1.3 Supranetwork Teams

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Lead Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testicular Cancer</td>
<td>Dr Linda Evans, Dr Peter Kirkbride</td>
</tr>
<tr>
<td>Penile Cancer</td>
<td>Mr Ian Eardley</td>
</tr>
</tbody>
</table>

1.4 Named Specialist Teams (all Sheffield)

<table>
<thead>
<tr>
<th>Speciality</th>
<th>Lead Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laparoscopic surgery, nephron – sparing surgery &amp; complex renal surgery.</td>
<td>Mr Neil Oakley, Mr Mark Haynes, Mr David Smith</td>
</tr>
<tr>
<td>Reconstructive surgery</td>
<td>Mr Derek Rosario</td>
</tr>
</tbody>
</table>

1.5 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.

The Urology NSSG have adopted a set of principles that apply to all out of network referrals including;
The Sheffield specialist MDT will be notified of all patients referred out of network for treatment by the locality Consultant. 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.

If, following referral out of network, the suggested management plan of a patient is changed there should be formal notification back to the Sheffield specialist MDT.

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**

Discussion at SMDT to determine treatment options

<table>
<thead>
<tr>
<th>Treatment agreed with patient</th>
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<tbody>
<tr>
<td>Surgery: Chesterfield patients offered Sheffield or Derby</td>
</tr>
<tr>
<td>ROBOT Surgery: Cambridge / Leeds</td>
</tr>
<tr>
<td>Brachytherapy: Leeds</td>
</tr>
<tr>
<td>Sheffield SMDT informed</td>
</tr>
</tbody>
</table>

**b) Bladder cancer**

Discussion at SMDT to determine treatment options

<table>
<thead>
<tr>
<th>Treatment agreed with patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery: Chesterfield patients offered Sheffield or Derby</td>
</tr>
<tr>
<td>Sheffield SMDT informed</td>
</tr>
</tbody>
</table>

**c) Penile cancer**

Diagnosis at local MDT

| Referral to Leeds for management options. STH Specialist MDT informed of referral. |

**Principles for Out of Network Referrals:**

I. Following a positive diagnosis patients are counselled locally. Supporting written information is provided.

II. Following local MDT discussion, those requiring specialist MDT input are presented by the MDT Lead to the Sheffield Specialist MDT meeting on a Monday to consider management options available. Penile cases are referred directly to the supranetwork MDT in Leeds by the locality lead and the Sheffield Specialist MDT informed at the next meeting.

III. The patient is reviewed locally, preferably in a joint oncology clinic to agree the treatment.
IV. If an out of network referral is required this is performed by the locality Consultant and the Sheffield MDT is informed of the referral. The care of the patient is now formally transferred from the Sheffield Specialist MDT.

V. The treating Consultant out of network, will copy the Sheffield specialist MDT into the letter following completion of treatment so that they are aware of the treatment undertaken. Any cases whereby the treatment recommended by the Sheffield specialist MDT is not performed will be brought back to the Sheffield specialist MDT by the local Consultant for governance and educational reasons.

VI. There will be a formal transfer of care back to the local MDT by the out of network MDT. If further treatment is an option the patient will be reviewed locally and then discussed at the Sheffield specialist MDT.
2.0 GP Referral Guidelines

Referral of patients from primary care should be to their Local MDT according to the national guidelines published by NICE and reproduced here:

2.1 General recommendations

A patient who presents with symptoms or signs suggestive of urological cancer should be referred to a team specialising in the management of urological cancer, depending on local arrangements.

2.2 Specific recommendations

Prostate cancer

Patients presenting with symptoms suggesting prostate cancer should have a digital rectal examination (DRE) and prostate-specific antigen (PSA) test after counselling. Symptoms will be related to the lower urinary tract and may be inflammatory or obstructive.

Prostate cancer is also a possibility in male patients with any of the following unexplained symptoms:

- erectile dysfunction
- haematuria
- lower back pain
- bone pain
- weight loss, especially in the elderly.

These patients should also be offered a DRE and a PSA test.

Urinary infection should be excluded before PSA testing, especially in men presenting with lower tract symptoms. The PSA test should be postponed for at least 1 month after treatment of a proven urinary infection.

If a hard, irregular prostate typical of a prostate carcinoma is felt on rectal examination, then the patient should be referred urgently. The PSA should be measured and the result should accompany the referral. Patients do not need
urgent referral if the prostate is simply enlarged and the PSA is in the age-specific reference range.\(^1\) C

In a male patient with or without lower urinary tract symptoms and in whom the prostate is normal on DRE but the age-specific PSA is raised or rising, an urgent referral should be made. In those patients whose clinical state is compromised by other comorbidities, a discussion with the patient or carers and/or a specialist in urological cancer may be more appropriate. C

Symptomatic patients with high PSA levels should be referred urgently. C

If there is doubt about whether to refer an asymptomatic male with a borderline level of PSA, the PSA test should be repeated after an interval of 1 to 3 months. If the second test indicates that the PSA level is rising, the patient should be referred urgently. D

**Bladder and renal cancer**

Click [here](#) for link to the Joint Consensus Statement on The Initial Assessment of Haematuria.

Male or female adult patients of any age who present with painless macroscopic haematuria should be referred urgently. C

In male or female patients with symptoms suggestive of a urinary infection who also present with macroscopic haematuria, investigations should be undertaken to diagnose and treat the infection before consideration of referral. If infection is not confirmed the patient should be referred urgently. D

In all adult patients aged 40 years and older who present with recurrent or persistent urinary tract infection associated with haematuria, an urgent referral should be made. C

In patients under 50 years of age with microscopic haematuria, the urine should be tested for proteinuria and serum creatinine levels measured. Those with proteinurea or raised serum creatinine should be referred to a renal physician. If

\(^1\) The age-specific cut-off PSA measurements recommended by the Prostate Cancer Risk Management Programme are as follows: aged 50–59 years ≥ 3.0 ng/ml; aged 60–69 years ≥ 4.0 ng/ml; aged 70 years and older ≥ 5.0 ng/ml. (Note that there are no age-specific reference ranges for men aged over 80 years. Nearly all men of this age have at least a focus of cancer in the prostate. Prostate cancer only needs to be diagnosed in this age group if it is likely to need palliative treatment.)
there is no proteinuria and serum creatinine is normal, a non-urgent referral to a urologist should be made. 

In patients aged 50 years and older who are found to have unexplained microscopic haematuria, an urgent referral should be made. 

Any patient with an abdominal mass identified clinically or on imaging that is thought to be arising from the urinary tract should be referred urgently. 

**Testicular cancer**

Any patient with a swelling or mass in the body of the testis should be referred urgently. 

An urgent ultrasound should be considered in men with a scrotal mass that does not transilluminate and/or when the body of the testis cannot be distinguished. 

**Penile cancer**

An urgent referral should be made for any patient presenting with symptoms or signs of penile cancer. These include progressive ulceration or a mass in the glans or prepuce particularly, but can involve the skin of the penile shaft. Lumps within the corpora cavernosa not involving penile skin are usually not cancer but indicate Peyronie’s disease, which does not require urgent referral. 

These guidelines can be found on the NICE website at: http://www.nice.org.uk/page.aspx?o=cg027niceguidelineword
3.0 Bladder Cancer

3.1 Referral Guidelines

The following patients are at high risk of having bladder cancer and should be referred urgently:

3.1.1 Those fitting the national two-week waiting referral guidelines i.e. microscopic haematuria in adults over 50 years of age and any adult with macroscopic haematuria. In male or female patients with symptoms suggestive of a urinary infection who also present with macroscopic haematuria, investigations should be undertaken to diagnose and treat the infection before consideration of referral. If infection is not confirmed the patient should be referred urgently.

3.1.2 An incidental finding of a bladder mass on imaging.

3.2 Initial Assessment

3.2.1 All patients with suspected bladder cancer should be assessed in a haematuria clinic. Ideally the investigations carried out on the first visit would be an ultrasound examination of the urinary tract followed by outpatient cystoscopy. It is recommended that a cystoscopy is carried out even if an upper tract abnormality is identified on ultrasound e.g. a renal neoplasm.

3.2.2 Where a bladder neoplasm is identified on cystoscopy, upper tract imaging should be carried out with abdominal ultrasound and intravenous urography or CT scan should be carried out. The patient should be listed for bimanual examination under anaesthesia and tumour resection.

3.2.3 At initial transurethral resection (TURT), complete resection of macroscopic disease including sampling of the underlying detrusor muscle should be carried out. Where disease is obviously invasive, representative resection to include muscle may be sufficient. Separate biopsies of areas of abnormal looking urothelium should also be performed.

3.2.4 In patients with possible high-risk superficial tumour (large tumour, solid appearance, multifocality, generalised CIS) or apparently invasive tumour (solid, infiltrative, ureteric obstruction on imaging) resection biopsies of the bladder neck/prostatic urethra should be performed in patients in whom subsequent cystectomy would be considered.

Thus for any new high risk tumour, the following specimens should be sent at the time of first resection

- Resection biopsy of tumour
- Biopsies of tumour base
- Biopsies of adjacent/distant abnormality
- Loop biopsies of bladder neck/prostatic urethra in selected patients (as above).

3.2.5 Cross-sectional imaging of the pelvis, abdomen and chest should be carried out prior to TURT in cases with suspected invasive disease.

3.3 Disease Categories

3.3.1 Clinically Non-Muscle Invasive Disease (Pending Histopathology)

Tumours judged as clinically non-muscle invasive should be resected completely. Bulky tumours may require more than one resection to achieve clearance.

Upon clearance, patients should receive an initial dose of intravesical chemotherapy within 6 hours of resection unless there is heavy haematuria or suspicion of perforation.

Histology should be reviewed at the unit MDT meeting in all cases and a subsequent follow-up plan formulated.

3.3.2 Pathological Superficial Disease (low grade as designated at MDT)

Cystoscopic follow up should be carried out three months after the original resection. At that stage patients should be categorised by risk (MRC groups 1 - 3).

Newly diagnosed pTa grade 1 and 2 tumours without CIS should be followed up according to the protocol below.

Routine repeat upper tract imaging is unnecessary except in patients with a history of upper tract disease or recurrent haematuria.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>CYSTOSCOPIC FINDINGS</th>
<th>MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial solitary tumour. No recurrence at 3/12. (20% risk of recurrence at one year)</td>
<td>Annual cystoscopy</td>
</tr>
<tr>
<td>2</td>
<td>Initial solitary tumour and recurrence at 3/12 or initial multiple tumours and no recurrence at 3/12</td>
<td>Course of intravesical chemotherapy (course of 6-10 or one every 3 months). Three monthly cystoscopy for the first year, then annual cystoscopy if no recurrence within 12 months.</td>
</tr>
<tr>
<td>3</td>
<td>Multiple tumours at presentation and recurrence at 3/12</td>
<td>Course of intravesical chemotherapy followed by three-monthly cystoscopy until no recurrence for 12 months, then annual cystoscopic surveillance.</td>
</tr>
</tbody>
</table>

In those tumours proving to be T1, or grade 3 (high grade) an early re-resection at 6 weeks should be performed to exclude understaging of invasive tumour.
3.3.3 Multifocal Recurrent Low Risk Disease (No CIS Or G3 Tumour after MDT review)

a. These patients should be given a course of intravesical chemotherapy (first line) or BCG (second line). Follow up should be by three-monthly cystoscopy until recurrences have been absent for one year. A second course of intravesical chemotherapy is appropriate for further recurrence. Follow-up may be tailored to the general clinical condition of the patient.

b. All patients with uncontrollable superficial disease, high-grade disease or carcinoma in-situ should be discussed at the local MDT and managed by a designated uro-oncologist. According to IOG recommendations, these cases should be discussed at the specialist MDT meeting for a decision regarding referral to the centre or for continued local treatment (IOG quality measure 2g115).

3.3.4 High Risk Non-Muscle Invasive Disease (Any G3 Tumour, Any pT1, Any CIS)

All patients with high-risk superficial disease should be discussed at the local MDT and managed by a designated uro-oncologist. According to IOG recommendations, these cases should be discussed at the specialist MDT meeting for a decision regarding referral to the centre or for continued local treatment. Specialists managing these patients should be able to offer the entire range of surgical and non-surgical treatments including bladder reconstruction and continent urinary diversion.

a) Patients with G3pTa/1 disease, CIS or multifocal rapidly recurrent superficial disease require additional therapy.

b) These patients may be considered for BCG immunotherapy. Those who respond favourably as evidenced by bladder biopsy clear of tumour at 3 month may be considered for maintenance BCG. These patients should be followed by rigid cystoscopy, with biopsy and/or barbotage, until considered free of recurrent risk (e.g. at 3 years) or unfit for radical treatment.

c) Primary cystectomy +/- bladder reconstruction should be offered as an alternative to BCG therapy.

d) Patients most likely to benefit from immediate Radical Cystectomy, rather than BCG, include those who are young (under 65yrs old), and those with high risk tumours (such as multi-focal disease or multiple tumours, those with CIS or those with prostatic urethral involvement)

e) Patients with G3pTa/1 disease and/or CIS who have not responded to BCG therapy should be offered radical cystectomy. Patients who are not fit for surgery should have other treatments discussed, including novel therapies, and clinical trials.

f) Patients being considered for cystectomy should be offered bladder reconstruction when appropriate.
g) Male patients being considered for orthotopic bladder reconstruction should have resection biopsies of the prostatic urethra. Female patients being considered for orthotopic reconstruction require biopsies of the bladder neck.

h) Exclusions for orthotropic reconstruction include urethral tumours and tumours involving the prostatic stroma. Multifocal, bladder neck and in-situ tumours are at increased risk of urethral recurrence.

i) In cases where the patient is not considered suitable for bladder reconstruction because of the risk of urethral recurrence, a urethrectomy should be carried out, preferably at the time of initial cystectomy.

j) Patients opting for reconstruction must be counselled by urological nurse specialists and must be aware of the commitment, the risk of enuresis, particularly nocturnal, and the possible need for ISC.

3.3.5 Muscle Invasive Disease (T2-T4)

All patients with muscle-invasive disease should be discussed at the local MDT and managed by a designated uro-oncologist. These cases should be discussed at the specialist MDT meeting for a decision regarding referral for specialist care or for continued local care. Specialist teams managing these patients should be able to offer the entire range of surgical and non-surgical treatments including bladder reconstruction and continent urinary diversion.

Tumours invading the detrusor muscle require additional treatment even if completely resected. This may include radiotherapy, neoadjuvant chemotherapy and radical Cystectomy.

a. All patients require full blood count, liver and bone biochemistry and assessment of renal function.

b. All patients require cross sectional imaging of the pelvis, abdomen and chest. Cross-sectional imaging of the pelvis should be carried out prior to transurethral resection.

c. Patients being considered for cystectomy should be offered bladder reconstruction when appropriate.

d. Exclusions for orthotopic reconstruction include urethral tumours and tumours involving the prostatic stroma. Multifocal, bladder neck and in-situ tumours are at increased risk of urethral recurrence.

e. In cases where the patient is not considered suitable for bladder reconstruction because of the risk of urethral recurrence, a urethrectomy should be carried out, preferably at the time of initial cystectomy.

f. Patients opting for reconstruction must be counselled by urological nurse specialists and must be aware of the commitment, the risk of enuresis, particularly nocturnal, and the possible need for ISC.

g. A lymphadenectomy carried out at the time of cystectomy to the level of the bifurcation of the common iliac vessels.

3.4 Radiotherapy

All patients undergoing radical radiotherapy will be have their entire bladder treated conformally using CT planning. Lymph nodes will not be treated.
Standard fractionation is 64.0 Gy/32# over 6.5 weeks. Alternatively 50-55Gy /20# over 4 weeks.

Patients will be reviewed in a joint oncology clinic at 6/52 and then referred back for urological follow-up.

3.5 **Chemotherapy**

- All patients with muscle invasive disease being considered for radical cystectomy should be discussed at the specialist MDT and offered neoadjuvant chemotherapy.
- Patients undergoing chemotherapy will be managed by a designated Urological non-surgical Oncologist (Dr Cath Ferguson, Dr Peter Kirkbride, Dr Jackie Martin, Dr Omar Din, Dr Linda Evans) working within the specialist multi-disciplinary team setting.
- If available, randomisation into a clinical trial should be considered.

3.5.1 **Eligibility criteria for neoadjuvant chemotherapy**

- Fit/suitable for radical cystectomy
- Clinical stage T2+, N0 M0
- Histological grade G3
- WBC >3.5, Neutrophil count >1
- Platelet count >120
- GFR>60mls/min24hr creatinine clearance
- Performance Status 0-1.

3.5.1.1 Neoadjuvant Chemotherapeutic Regimen

- Cisplatin 70mg/m² D2 + gemcitabine 1000mg/m² D1, and 8.
- 21-day cycle. 2-3 cycles.
- GFR>60mls/min.

3.5.2 Patients who would be suitable for neo adjuvant chemotherapy but who have suspicious rather than clearly positive lymph nodes, should proceed to cystectomy if appropriate, and any further systemic therapy would be based on findings at operation, and histology.

3.5.2.1 Patients following cystectomy with invasive muscle or T2+, WHO PS 0 or 1 and adequate renal function (GFR >60ml/min) could be considered for adjuvant chemotherapy.

3.5.3 **Adjuvant Chemotherapeutic Regimen**

- Cisplatin 70mg/m² D2 + gemcitabine 1000mg/m² D1 and 8.
- 21-day cycle. 4 cycles.

3.5.4 The indications for palliative chemotherapy are metastatic disease and progressive symptomatic local disease despite palliative radiotherapy. Criteria:

- WHO PS 0 or 1
- GFR>60ml/min
- 24hr urine creatinine clearance >60 ml/min, checked prior to each cycle.
• WCC >3.5, Neutrophil count >1
• Platelet count >100

Palliative Chemotherapeutic Regimen
• Cisplatin 70mg/m² D2 + gemcitabine 1000mg/m² D1+ D8
• 21-day cycle.
• Re-scan to assess for disease response after 2 cycles.
• Maximum of 4 or 6 cycles.

Inadequate renal function
• 24 hour creatinine clearance 50 – 60 ml/min - cisplatin + gemcitabine 50% dose reduction.
• 24 hour creatinine clearance <50 consider alternative regime (MV – methotrexate + vinblastine or carboplatin + gemcitabine).

3.6 Palliative local treatment

a) TURBT as necessary

b) Cystectomy may be considered as a palliative procedure as in cases of recurrent bleeding, voiding difficulties or obstructive uropathy.

c) Palliative radiotherapy should be considered for symptomatic disease (e.g. pain, haematuria) for locally advanced disease.

3.7 Follow Up After Radical Radiotherapy

Patient reviewed by surgical Uro Oncologist, then arrangements for cross sectional imaging, rigid cystourethroscopy and EUA and biopsy to assess response 3 months after RT. Further follow-up regimen at discretion of locality surgeon.

3.8 Non – TCC Bladder Cancer

All to be discussed at central MDT.

Adenocarcinoma: partial cystectomy if related to urachal remnant must be considered. Grading/staging/imaging as for TCC.

Squamous cell carcinoma: radical cystectomy. Grading/staging/imaging as for TCC

Non-epithelial cancers: discussion with appropriate MDTs (e.g. sarcoma) for tailoring treatment including surgery.

Alternative chemotherapy regimes may be available for non-TCC bladder cancers.
4.0 Upper Tract Transitional Cell Carcinoma

4.1 General Points

4.1.1 These tumours can be difficult to diagnose and distinguish from benign conditions such as matrix stones.

4.1.2 Patients have a high risk of developing lower tract tumours and require cystoscopic follow up, initially three months after definitive treatment.

4.1.3 Conservative treatment by local resection remains unconventional and should only be used in special circumstances and after assessment by a designated Urological Oncologist within a Multidisciplinary Team setting.

4.1.4 Standard investigations include cystoscopy and upper tract imaging. A minimum of two positive investigations (out of U/S, IVU, URS, and retrograde pyelogram, CT or MRI) is required to make the diagnosis; unless decided at central MDT.

4.1.5 Tissue diagnosis is not always possible and patients should be informed of this uncertainty before definitive surgery.

4.1.6 Assessment of the contra lateral kidney and overall renal function is mandatory.

4.1.7 Following nephroureterectomy, a single dose of intra-vesical mitomycin C within 6 hours, should be given unless contraindicated.

4.2 Tumours of the Kidney and Upper two thirds of the Ureter

4.2.1 The standard treatment is nephroureterectomy (open or laparoscopic).

4.2.2 The lower ureter may be removed by open surgery or endoscopic resection, provided care is taken to widely resect all the intra-mural ureter and diathermise and seal the distal ureter.

4.2.3 Indications for percutaneous treatment remain controversial, but invasive, high grade, large and multifocal tumours are unsuitable. Patients with normal renal function and no history of TCC are best treated by standard surgery. No neo-adjuvant or adjuvant systemic therapy is currently recommended, although individual cases may be considered for chemotherapy following discussion at MDT.

4.2.4 Enlarged lymph nodes seen on CT or peri-operatively should be excised for histology.

4.3 Tumours of the Distal Ureter

4.3.1 The standard treatment is nephroureterectomy (open or laparoscopic). Distal ureter should be formally dissected.
4.3.2. Solitary low-grade tumours may be suitable for local resection (open or ureteroscopic) +/- re-implantation, particularly in association with a solitary kidney. No neo-adjuvant or adjuvant systemic therapy is currently recommended, although individual cases may be considered for chemotherapy following discussion at MDT.

4.3.3. Enlarged lymph nodes seen on CT or peri-operatively should be excised for histology.

4.4. Follow Up

4.4.1. Patients should have a cystoscopy carried out at three months. The frequency and method of subsequent follow up should be determined at MDT.

4.4.2. High grade or invasive tumours should have CT surveillance if chemotherapy is appropriate.

4.5 Systemic Therapy

4.5.1 Palliative chemotherapy is usually only indicated in patients with symptomatic metastatic disease who have adequate renal function (GFR>50mls/min) and are of performance status 0-2. Currently standard therapy is combination cisplatin and gemcitabine, although the use of methotrexate and vinblastine could be considered in patients with borderline or poor renal function.

4.6 Trials

4.6.1 Consider all patients for POUT trial.
5.0 Kidney Cancer

5.1. Evaluation

5.1.1. Patients with a possible diagnosis of renal cancer should have the following initial investigations:

- Dipstick urinalysis
- MSU
- FBC, U&E, LFT, Calcium, ESR
- Ultrasound of renal tract (including liver and para-aortic assessment)
- Contrast CT of abdomen and chest

5.1.2. All cases should be discussed at the local and central multidisciplinary team meetings to enable a treatment planning decision to be made (to include patient fitness assessment).

5.1.3 Renal biopsy is not a standard investigation and should be considered following MDT discussion.

5.1.4 MRI scan should only be used to de-lineate T3/4 (IVC extension or local invasion) disease after MDT discussion or in patients with poor renal function.

5.2. Surgical Treatment

5.2.1. The standard treatment should be radical nephrectomy, involving excision of the kidney, perinephric fat and Gerota’s fascia (open or laparoscopic).

5.2.2. All patients should be considered for nephron sparing surgery (open or laparoscopic).

5.2.3. Surgery should be carried out by designated members of the multidisciplinary team, in any locality other than those patients indicated in section 5.2.7 requiring surgery at Sheffield.

5.2.4. Adrenalectomy is only mandatory in the case of upper pole tumours or tumours greater than 7cm (T2).

5.2.5. The management of nodal disease and vena caval involvement should be discussed at the central MDT meeting. MRI imaging should be used to assess the extent of local disease or vascular tumour thrombus/invasion.

5.2.6 Nodal disease found at the time of surgery should be excised radically or sampled, at the discretion of the operating surgeon. Small nodal masses on staging CT scan should not necessarily stop a surgical exploration.

5.2.7 The following patients should have their surgery carried out in Sheffield:

- Cryotherapy/ radiofrequency ablation
- Resection of primary tumours which have or are suspected to have invaded renal vein, vena cava or heart
- Resection of metastatic disease
- Resection of bilateral cancers
- Resection of any primary where it is predicted that the patient will subsequently require dialysis
- Surgical management of patients with von Hippel-Lindau disease or hereditary papillary tumours
- Nephron-sparing surgery
- Therapy with biological modifiers
- Palliative radiotherapy
- Non-surgical treatments such as immunotherapy and biological modifiers
- Appropriate clinical trials

5.3 Follow up after ‘Curative’ Surgical Treatment

All patients should have 6/12 blood pressure monitoring and renal function assessment by their General Practitioner. Chronic Kidney disease should be dealt with following National nephrological guidelines. Follow up should be tailored to the individual patient and discussed at MDT; but in practical terms fall into two broad groups.

5.3.1 Low Risk Groups. Chest and abdominal CT at 1 and 5 years then discharge.

5.3.2 High Risk Group: Chest and abdominal CT at 6/12 – 1 year and then annually thereafter to 5 years.

5.3.3 Patients eligible for trial of adjuvant therapy (SORCE) to be decided at MDT following histology.
- Histologically proven RCC
- No evidence of residual macroscopic disease on CT scan
- Leibovitch/ Mayo score intermediate or high
- Age>18
- Date if nephrectomy .4 weeks and <3 months previously
- Performance status 0-1
- No previous malignancy
- No other anti-cancer treatment for RCC except surgery
- No significant cardiac disease

These patients should be discussed at MDT and, if appropriate, referred directly to Dr Omar Din, Dr Linda Evans at WPH.

NOTE: Adjuvant systemic immunotherapy is NOT recommended outside a clinical trial.

5.3.4 Patients who are unlikely (by means of age, performance status, preference) to benefit from further aggressive treatment, consider discharge with appropriate advise to GP.
5.4 **Recurrent Disease**

5.4.1 Any recurrent renal cancer should be discussed at the specialist Urology MDT for an individual decision made on imaging and treatment.

5.5 **Metastatic Renal Cancer (N>1,M>1)**

5.5.1 All cases should be discussed at the central MDT meeting.

5.5.2 Individual cases, following MDT discussion, may be offered a nephrectomy and resection of a solitary metastasis. Counselling should warn of the poor prognosis and likely disease recurrence.

5.5.3 Selected patients may be considered for participation in clinical trials of systemic therapy provided that they have histologically confirmed disease (preferably obtained at nephrectomy). The patient should have:

- Measurable disease.
- Good performance status (0 or 1)
- Normal haematological parameters
- Life expectancy >12 weeks

These patients should be discussed at MDT and, where appropriate, referred directly to Dr Omar Din, Dr Linda Evans at WPH if a trial entry is considered.

5.5.4 Patients may be considered for treatment with targeted therapies outside a clinical trial if they fulfill the following criteria:

- Patients without histology not eligible UNLESS specifically decided at MDT
- No previous systemic treatment
- Measurable metastatic disease
- PS 0-1
- Adequate haematological / hepatic / renal / cardiac function
- If brain metastases must be stable disease
- No uncontrolled hypertension
- All patients will be discussed at MDT prior to decision to treat with targeted therapies.
- There are also a small number of patients whose cancer has failed or progressed following first line treatment may be eligible for second line treatment or clinical trials.

5.5.5 Patients with symptomatic cerebral metastases should have dexamethasone and be considered for radiotherapy, stereotactic radiosurgery or neuro-surgical intervention.

5.5.6 In the presence of metastatic disease and good performance status, nephrectomy should only be offered in selected cases suitable for targeted therapies. Palliative nephrectomy, palliative renal radiotherapy, renal embolisation can be considered to palliate local symptoms.
5.5.7 Patients who have symptomatic metastatic disease but who are not candidates for targeted therapies may be offered medroxyprogesterone acetate or steroids as alternative systemic therapy.

5.5.8 Appropriate Macmillan, Palliative care and Nurse/Social support should be organised for patient and family.

5.6 **Renal Cysts**

5.6.1 Simple cysts seen on ultrasound can be discharge from urological follow up.

5.6.2 Complex cysts should be considered for a contrast abdominal CT scan

5.6.3 Review at locality MDT; Bozniack classification reported and reviewed

5.6.4 Bozniack 1,2 can be discharged. Bozniack 2F should have follow up with a CT at 6-12 months.

5.6.5 Bozniack 3,4 discuss likelihood of renal cancer and consider partial or radical nephrectomy. All should be discussed at the specialist MDT.

5.7 **Pathway Timings**

5.7.1 In order to enable the first definitive treatment by day 62 localities should aim to ensure that patients:
- receive their first diagnostic test within 14 days of referral
- Have local MDT discussion by day 24
- Have specialist MDT discussion by day 31
- Have a decision to treat by day 38
6.0 Retroperitoneal Tumours

Some tumours of the kidney, renal bed, ureters and pelvis, whilst in most cases will be of renal or urological origin, may be sarcomas of the retroperitoneum. If sarcoma is part of the differential diagnosis, the case will be referred to the sarcoma MDT for review of the diagnosis and management plan pre-operatively. In most cases surgery will be undertaken jointly by urological and sarcoma surgeons depending on the precise anatomy of the disease. In some cases, pre-operative radiotherapy may enhance operability. For very rare sarcoma subtypes (Ewings, Rhabdomyosarcomas etc), pre operative chemotherapy may be required.

Conversely, confirmed cases of sarcoma being managed by the sarcoma MDT which involve urological structures such as the bladder, ureter or kidney will be referred for discussion by the urology MDT pre-operatively and joint surgery undertaken with a member of the urology MDT team. In addition cases of retroperitoneal sarcoma which may be close to the ureters, urological involvement will be sought about pre-emptive stenting or ureteric repair if the ureter has to sacrificed.

In cases of retroperitoneal sarcoma whose removal will mandate removal of one kidney, preoperative differential isotope renogram will be performed to ensure the adequacy of renal function post operatively.

More detailed description of management and diagnostic processes for sarcomas can be found in the North Trent Regional Sarcoma Protocol.
7.0 **Testicular/Germ Cell Cancers**

7.1 **Guidelines for Initial Management at Presentation**

7.1.1 Patients suspected of harbouring testicular malignancy ie lump in the testis doubtful epididymitis or orchitis not resolving in two to three weeks should be referred urgently for assessment.

7.1.2 Any patient suspected of having testicular malignancy should be seen within two weeks by an urologist.

7.1.3 Education aimed at young men to inform them of the disease and its curability should be supported.

7.2 **Primary Treatment**

7.2.1 Preoperative investigations should include AFP, HCG, LDH, ultrasound of both testis and chest x-ray.

7.2.2 Inguinal orchidectomy should be performed unless immediate referral for chemotherapy is indicated. Then orchidectomy should be done after chemotherapy completed.

7.2.3 Possibility of receiving a prosthesis should be discussed with all patients.

7.2.4 Where appropriate sperm storage should be discussed with men who may require chemotherapy or radiotherapy. Sperm storage involves routine testing for hepatitis B, HIV and other viruses prior to sperm samples being collected, counselling for sperm storage should involve a senior member of the medical staff.

7.2.5 On confirmation of the germ cell tumour all patients should be referred to Weston Park Hospital and seen within four weeks of diagnosis.

7.2.6 Pathology should be reviewed by a specialist urological pathologist at the Royal Hallamshire Hospital, and reported accordingly to the Royal College of Pathology minimum data set guidance.

7.2.7 Contra lateral testicular biopsy should only be considered before chemotherapy or at least two years after radiotherapy or chemotherapy has been completed.

7.2.8 Patients with biopsy proven carcinoma in situ of the contralateral testis should be considered for irradiation to the testis (dosage 20 Gy in 10 over two weeks) to prevent progression to invasive disease.

7.3 **Initial investigation and clinical staging**
7.3.1 Serum measurement of APF, HCG and LDH is essential for the follow-up of patients with teratomas.

7.3.2 Marker levels together with imaging technique should be used to allocate a prognostic group in patients with metastatic disease.

7.3.3 CT scanning of thorax/abdomen/pelvis is an essential part of the staging for all germ cell tumours.

7.3.4 All CT scans should be reviewed by a radiologist experienced in their interpretation in germ cell tumours.

7.3.5 All staging should be completed and reviewed no later than four weeks after diagnostic surgery.

7.4 Guidelines for Referral of Patients with Germ Cell Tumours

7.4.1 Stage I Testicular Germ Cell Tumours

Referral to Weston Park Hospital within two to four weeks of diagnosis, allowing time for staging CT scan, post operative markers and histological review. Referral can be via the next MDT meeting or by letter or fax to Dr Linda Evans secretary, Weston Park Hospital.

In January 2009 specific referral pathways were developed for teenagers (16-18 years) and young adults (19 -24 years) into the TYA MDT. These are available on the North Trent Cancer Network website. The Gynaecology & Urology NSSG has agreed age appropriate referral into these pathways

7.4.2 Stage II – IV Testicular Germ Cell Tumours

Asymptomatic Patients

Urgent referral by fax and letter to Dr Linda Evans secretary at Weston Park Hospital on confirmation of germ cell tumour with evidence of residual disease the patient will be reviewed in the next available clinic at Weston Park Hospital.

Symptomatic Patients

Urgent referral via fax or phone to Dr Linda Evans team with a view to arranging admission to ward 3, Weston Park Hospital or for review in the next testicular teratoma clinic whichever can be arranged sooner.

7.4.3 Ovarian and Other Non-Testicular Germ Cell Tumours

Fax or phone to Dr Linda Evans secretary at Weston Park Hospital on confirmation of diagnosis, with a view to arranging admission to ward 3 or for review at next clinic whichever can be arranged sooner.
Proposed surgery should be discussed with the Oncologists if diagnosis made prior to planned resection though surgery is likely to remain an important part of the multi-disciplinary management.

All patients referred by letter, fax or phone will be discussed at the next germ cell MDT meeting.

Contact Details:

<table>
<thead>
<tr>
<th>Dr Linda Evans: via secretary – Emma Pearson - 0114 226 5072</th>
<th>MDT Facilitator – Emma Pearson 0114 226 5072</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-mail <a href="mailto:emmapearson@nhs.net">emmapearson@nhs.net</a></td>
<td>WPH Fax: 0114 226 5512</td>
</tr>
</tbody>
</table>

7.4.4 Female Germ Cell Tumours

Fax or phone Prof Coleman or Dr Winter’s secretary Norma Smith

<table>
<thead>
<tr>
<th>Prof R E Coleman: via secretary – Norma Smith - 0114 226 5079</th>
<th><a href="mailto:r.e.coleman@sheffield.ac.uk">r.e.coleman@sheffield.ac.uk</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>e-mail <a href="mailto:r.e.coleman@sheffield.ac.uk">r.e.coleman@sheffield.ac.uk</a></td>
<td></td>
</tr>
</tbody>
</table>

7.5 Management of Stage I Disease

Nb Chemo- and radio-therapy should only be given at Weston Park Hospital and by a clinician experienced in the management of germ cell tumours.

7.6 Management of Stage I Seminoma

7.6.1 Single agent carboplatin, or surveillance or adjuvant radiotherapy, 20 Gy in 10 fractions. Patients should be offered a choice of modalities. Where there is uncertainty about nodal involvement, radiotherapy is preferred.

7.6.2 In stage I seminoma of the testis where there are risk factors for pelvic nodal disease the field should be extended to a dogleg to include ipsilateral pelvic nodes.

7.6.3 A policy of surveillance may be considered in the context of clinical trials or rare instances where radiation has previously been given or in patients who are medically or mentally unable to tolerate chemotherapy treatment.

7.7 Management of Stage 1 Teratoma

7.7.1 Patients with stage I teratoma or mixed seminoma teratoma of the testis with no high risk features should be managed by surveillance following inguinal orchidectomy.

7.7.2 Adjuvant chemotherapy should be offered to patients with stage I teratoma or mixed seminoma teratoma of the testis if high-risk features are present (blood vessel and/or lymphatic invasion) or if patients are unable or unwilling to comply with the policy of surveillance.
7.7.3 Adjuvant chemotherapy for high risk stage I teratoma is two courses of BEP chemotherapy will be given, after confirmation of vascular invasion by the germ cell MDT pathologists.

7.7.4 Patients on surveillance will be seen in designated clinic following a defined protocol by a member of the Germ Cell MDT.

7.7.5 CT scan of thorax and abdomen should be routinely performed as part of follow-up of patients with germ cell tumours. The frequency of CT scanning is greater in patients with marker negative disease.

7.8 Management of Metastatic Disease for Metastatic Seminoma

7.8.1 Radiation therapy to the para-aortic and ipsilateral pelvic node (dogleg) is recommended for treatment of stage IIa metastatic seminoma. 30 Gy in 15# with boost of 6 Gy 3# to affected nodes and 5cm margin.

7.8.2 Stage IIb seminoma radiotherapy dose 30-36 Gy or chemotherapy is recommended as initial treatments.

7.8.3 Patients with Stage IIc,d seminoma chemotherapy is the recommended initial treatment.

7.8.4 Initial Cisplatin containing chemotherapy is recommended for advanced seminomas.

7.8.5 Carboplatin should only be used as an alternative to Cisplatin in exceptional circumstances.

7.9 Management of Metastatic Teratoma

All patients should receive chemotherapy at Weston Park Hospital.

7.9.1 Three cycles of BEP chemotherapy with Bleomycin total dose of 270mg is standard therapy for good prognostic disease.

7.9.2 Under normal circumstances weekly Bleomycin should be given and should not normally exceed 270mg in patients with good prognosis.

7.9.3 Patients with intermediate and poor prognosis should receive at least 4 cycles of BEP or POMB-ACE and where possible entered into one of the designed multi-centre studies to define best treatment.

7.10 Treatment of Residual Masses after Chemotherapy

7.10.1 Patients with teratoma who have persistent residual mass of >1cm after chemotherapy and markers normalised should be considered for complete excision.
7.10.2 Post chemotherapy surgery for metastatic teratoma should only be performed in specialist centres (Mr Beard / Naseef abdominal surgery, NGH thoracic surgeons for chest).

7.10.3 Further chemotherapy should be considered if incomplete excision and pathology confirmed viable germ cell cancer in resected specimen.

7.10.4 In patients with metastatic seminoma and residual mass a policy of observation and CT scan is performed 6 monthly until complete remission or disease stabilisation. Biopsy is recommended if mass increases in size and should be considered if large residual mass persists.

7.10.5 Imaging of post chemotherapy residual masses should be referred to a radiologist core member of the Network Germ Cell Tumour MDT for review.

7.10.6 Histology should be submitted for review by the Sheffield Urological Tumour Panel, on behalf of the Network Germ Germ Tumour MDT.

7.11 Recommendations around Treatment of Relapsed Disease

7.11.1 Patients with relapsed disease should be treated at Weston Park Hospital and considered for entry into clinical trials.

7.11.2 Surgery should be considered an important part of the treatment for late relapse.

7.12 Recommendations for the Central Nervous System Metastases

7.12.1 Initial presentation of brain metastases or central site CNS relapse should be treated with curative intent.

7.12.2 Initial urgent resection operable lesions should be considered.

7.12.3 Radiotherapy has a role in relapsed patients with CNS disease.

7.13 Nursing Care

7.13.1 Specialist nurse involvement is recommended at all stages in the management of germ cell tumours.

7.14 Follow Up

7.14.1 Patients with germ cell malignancy will be followed up in the specialist germ cell tumour clinic at Weston Park Hospital. Follow up will be individualised on the basis of histology, stage and treatment for five years and then patients will be routinely discharged back to the care of their GP.
8.0 Penile Cancer

8.1 Referral: Any suspicious penile lesion (excluding a Peyronie’s plaque) should be referred to an urgent Urology clinic, following 2/52 wait referral guidelines.

8.2 Investigation: Urgent penile biopsy should be performed, with assessment of local and deep lymph nodes (clinical assessment).

8.3 Histology review: Penile cancer histology should be reviewed as soon as possible in the Local MDT and referred urgently to the Supra-regional centre (Leeds – Mr Ian Eardley, as per guideline pathway).

8.4 All newly diagnosed penile cancers are faxed through to the supranetwork MDT and histology slides sent through at the same time. Cases received are discussed the following week.

8.5 Treatment.
   Excisional biopsy maybe regarded as 1st treatment for cancer waiting times purposes.

8.6 Further Treatment: Further treatment should be decided upon by the Supra-regional MDT; which may include local systemic therapy and radiotherapy in WPH delivered under the care of Dr Peter Kirkbride or Dr Cath Ferguson.
   Those patients who require a curative primary treatment option will be counselled by a member of the Leeds supranetwork MDT.
   Those having a palliative treatment option or a procedure that Leeds are happy is undertaken locally receive counselling via a locality core team member.

8.7 Follow up: Follow up and plan for recurrent disease will be decided upon by the Supra-regional MDT; which may include locality follow up, particularly palliative care and Macmillan support.

8.8 Patients with invasive male genital skin cancers should be referred to the urology MDT which will refer appropriate cases on to the supranetwork penile MDT in Leeds. Specialist Skin MDT review of management is recommended for penile melanoma cases in addition to the supranetwork penile MDT.

8.9 Patients with penile melanoma are relatively rare and are discussed at both the Specialist penile MDT and the melanoma MDT (Leeds or Sheffield). Although the management of melanoma is usually decided via the melanoma MDT the surgery may be more relevant to a penile surgeon, therefore management is undertaken on a case by case basis.

9.0 Germ cell imaging guidelines

Areas to be examined: Lower neck, chest, abdomen and pelvis.

Localisation: Ultrasound (or MRI). Most patients referred after orchidectomy.

Staging: CT with intravenous contrast medium.

Brain CT/MRI should be undertaken in patients at high risk (e.g., HCG > 10,000, > 20 lung metastasis.

Radiotherapy planning: Un-enhanced CT.

Chemotherapy assessment: Un-enhanced CT. after 3 cycles or at the completion of treatment if good marker response documented.

Surveillance:

- Tumour marker positive Un-enhanced CT at 6 and 12 months
- Tumour marker negative Un-enhanced CT at 3, 6, 12, 18 and 24 months.

Note if pelvis CT – ve at staging, repeat CT of pelvis not required unless rising markers or other clinical indication.

Post treatment follow up: Un-enhanced CT x 1 post treatment and CXR on each clinic attendance.

Repeat CT for patients with rising markers or other clinical indications.
10.0 Histopathology of Urological Tumours

All suspected and actual urological tumours should be submitted for histopathological examination.

In general, specimens should be examined and reported along the guidelines in the Royal College of Pathologists current relevant datasets for adult renal, bladder, prostate and testicular tumours. Some comments are noted below. Reports should contain the data items, and a proforma style is preferred.

The edition of TNM staging should be stated (the 7th edition, 2009, is preferred).

Bladder, renal pelvis and ureteric tumours: the 1973 WHO classification of urothelial tumours as grades 1 to 3 should be given; the 2004 WHO may also be stated according to local custom. (There is currently ongoing debate about moving to the 2004 categorisation.)

Prostate tumours: core biopsies should include an indication of the amount of tumour if present, (e.g. length in mm, or total percentage of cancer in all cores). When, rarely, there are three different Gleason patterns, the sum score given should be the predominant + the highest. Radical prostatectomy specimens should be submitted for histology in entirety.

Testicular tumours: all testicular malignant tumours should be submitted for review by the Sheffield Urological Tumour Panel, on behalf of the Network Germ Cell Tumour MDT, according to Cancer Network Pathology Guidelines. Metastatic tumour of possible testis or germ cell origin, and extra-gonadal germ cell tumours should be submitted. Benign testicular tumours may also be submitted.

The Sheffield Urological Tumour Panel is also willing to accept referral of cases for consultation.

Sarcomas and lymphomas of the urinary system should be referred to the respective Sarcoma and Lymphoma Tumour Panels, as outlined in the relevant NSSG Guidelines.

Sheffield Urological Tumour Panel
Dr J R Goepel, Dr D Hughes, Dr M Fernando, Dr S Morgan
Department of Histopathology
Royal Hallamshire Hospital
Glossop Road
Sheffield
S10 2JF

Penile cancer: all newly diagnosed cases should have the associated histology slides forwarded to:
Dr P Hamden (Specialist Pathologist)
Pathology Department
Chancellor Wing
St James’ University Hospital
Telephone Number 0113 2064410 (Heather Bisby Secretary)
11.0 Prostate Cancer

11.1 PSA MEASUREMENT

Recommendations for measuring PSA in the clinic are as follows:

11.1.1 Patients with an obvious advanced carcinoma on DRE, irrespective of age and performance status.

11.1.2 Men with a palpable abnormality on DRE suggesting early or locally advanced prostate cancer.

11.1.3 Follow up of patients with diagnosed treated or untreated prostate cancer.

11.1.4 As part of a clinical trial, if required by the protocol.

11.1.5 Patients with incidental prostate cancer, discovered following TURP.

11.1.6 Case finding should only be done following clinical assessment and careful counselling of the patient. Advice must be given about the consequences of PSA measurement as per best practice outlined in the “Prostate Cancer Risk Management Program”. (Prostate Cancer Risk Management Programme: an information pack for primary care. NHS Cancer Screening Programmes; Sheffield 2009.)

11.2 INDICATIONS FOR PROSTATE BIOPSY

In the presence of an elevated PSA or abnormal DRE a prostate biopsy would normally be carried out except under the following circumstances;

(a) If there is a clinical suspicion of UTI or prostatitis, treat with antibiotics and re-check the PSA after an appropriate interval (4-6 weeks).

(b) Co-morbidity or life expectancy such that prostatic biopsy would not significantly alter patient management.

(c) Patient chooses not to have biopsy following counselling.
Table 1. TNM Classification for Prostate Cancer (2002)

<table>
<thead>
<tr>
<th>STAGE</th>
<th>SUB-STAGE</th>
<th>DEFINITION</th>
</tr>
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<tbody>
<tr>
<td>T1</td>
<td>Clinically unapparent tumour, not detected by DRE nor visible by imaging</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T1a</td>
<td>Incidental histologic finding; &lt;5% of tissue resected during TURP</td>
</tr>
<tr>
<td></td>
<td>T1b</td>
<td>Incidental histologic finding; &gt;5% of tissue resected during TURP</td>
</tr>
<tr>
<td></td>
<td>T1c</td>
<td>Tumour identified by needle biopsy due to elevated PSA</td>
</tr>
<tr>
<td>T2</td>
<td>Confined within the prostate (detectable by DRE, not visible on TRUS)</td>
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</tr>
<tr>
<td></td>
<td>T2a</td>
<td>Tumour involves half of the lobe or less</td>
</tr>
<tr>
<td></td>
<td>T2b</td>
<td>Tumour involves more than one half of one lobe but not both lobes</td>
</tr>
<tr>
<td></td>
<td>T2c</td>
<td>Tumour involves both lobes</td>
</tr>
<tr>
<td>T3</td>
<td>Tumour extends through the prostate capsule but has not spread to other organs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T3a</td>
<td>Unilateral extracapsular extension</td>
</tr>
<tr>
<td></td>
<td>T3b</td>
<td>Bilateral extracapsular extension</td>
</tr>
<tr>
<td></td>
<td>T3c</td>
<td>Tumour invades seminal vesicle(s)</td>
</tr>
<tr>
<td>T4</td>
<td>Tumour is fixed or invades adjacent structures other than seminal vesicles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T4a</td>
<td>Tumour invades bladder neck and/or external sphincter and/or rectum</td>
</tr>
<tr>
<td></td>
<td>T4b</td>
<td>Tumour invades levator muscles and/or is fixed to pelvic wall</td>
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<thead>
<tr>
<th>STAGE</th>
<th>SUB-STAGE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node (N)</td>
<td>Regional lymph nodes</td>
<td></td>
</tr>
<tr>
<td>N0</td>
<td>No lymph nodes metastasis</td>
<td></td>
</tr>
<tr>
<td>N1</td>
<td>Metastasis in single lymph node &lt;2 cm in greatest dimension</td>
<td></td>
</tr>
<tr>
<td>N2</td>
<td>Metastasis in single lymph node &gt;2 cm but &lt;5 cm in greatest dimension, or multiple lymph nodes, none &gt;5 cm</td>
<td></td>
</tr>
<tr>
<td>N3</td>
<td>Metastasis in lymph node &gt;5 cm in greatest dimension</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>STAGE</th>
<th>SUB-STAGE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metastasis</td>
<td>Systemic spread</td>
<td></td>
</tr>
<tr>
<td>M0</td>
<td>No distant metastasis</td>
<td></td>
</tr>
<tr>
<td>M1a</td>
<td>Non-regional lymph node metastasis</td>
<td></td>
</tr>
</tbody>
</table>
| M1b   | Bone metastasis  
a) Axial skeleton only  
b) Extending to peripheral skeleton also |
| M1c   | Metastasis at other sites |
11.3 MANAGEMENT OF cT1a DISEASE

These are patients with incidental carcinoma (less than 5% prostate chips), diagnosed after TURP, with an unsuspected carcinoma prior to the surgery.

- Reassessment in urology clinic to reassess with PSA evaluation and determine follow up.

- A man who is a suitable candidate for radical treatment should be considered for further investigation and treatment if appropriate.

11.4 MANAGEMENT OF cT1b and T1c and T2 DISEASE (clinically localized)

11.4.1 Choosing treatment options and counselling patients

Patients should be counselled regarding the standard options for management i.e. active surveillance, watchful waiting, radiation therapy or radical prostatectomy. Counselling should be undertaken by both a specialist Urological Oncological Surgeon and Clinical Oncologist (with an interest in urological cancer) ideally within a joint clinic setting, with input also from a Nurse Specialist.

All patients discussed at the Sheffield Specialist MDT (including their own local catchment population as well as referrals from local MDTs) have their case reviewed and if appropriate are directed to the joint clinic in STH consisting of the following personnel;
Mr John Anderson, Dr Cath Ferguson, Mr Patrick Cutinha, Mr David Smith, Mr James Catto, Mr Derek Rosario, Mr Mark Haynes, Mr Neil Oakley.
Any of the above team members may counsel patients.

Mr David Smith, Mr Patrick Cutinha and Dr Jackie Martin see Barnsley patients locally and refer into the Sheffield MDT for case review.

Mr Mike James, Nicky James and Dr Peter Kirkbride see Chesterfield patients locally and refer into the Sheffield MDT for case review.

Mr John Leveckis, Mr Sanjeev Pathak and Dr Cath Ferguson see Doncaster patients locally and refer into the Sheffield MDT for case review.

Mr Zahir Abassi and Dr Omar Din see Rotherham patients locally and refer into the Sheffield MDT for case review.

11.4.2 Currently the place of alternative focal therapies e.g. HIFU, cryotherapy has not been adequately established.

11.4.3 Referral for LDR brachytherapy is to Leeds (Dr Ann Henry or Dr David Bottomley, Consultant Clinical Oncologists at Bexley Wing St James Hospital). The exclusion criteria are as follows:

- Prostate size greater than 50cc
- Recent TURP
- Significant bladder outflow obstruction
- Previous AP resection
- Previous high dose radiotherapy

In those patients who are referred for LDR brachytherapy and the Leeds MDT make a recommendation for HDR / external beam radiotherapy there should be re-discussion at the Sheffield central MDT.

11.4.4 Patients with a Gleason score on biopsy of 6 or below and a PSA of less than 10ng/ml do not require further staging prior to being offered treatment.

11.4.5 Further imaging should be bone scan +/- pelvic MRI (to assess lymph node status).

11.4.6 ACTIVE SURVEILLANCE

11.4.6.1 Who?
- Clinical stage T1 –T2aGleason sum ≤ 7 (3+4)
- PSA ≤10 ng/ml
- ≤ 3 positive cores
- ≤50% or ≤5mm length of any single biopsy core involved by tumour
A routine second biopsy in the first year should be offered,

11.4.6.2 How?
- DRE and PSA every 3 months for 2 years (then every 6 months)
- Offer re-biopsy every two years following the second biopsy.

11.4.6.3 Triggers to consider active treatment
- PSA velocity > 1ng/ml per year or the use of a predicted PSA doubling time of less than 2 years
- Gleason Sum ≥ 4 + 3
- >50% of any core biopsy or >5mm in any one core involved by tumour
- Patient or clinician concern

11.5 MANAGEMENT OF cT3 Nx Mx DISEASE (locally advanced)

11.5.1 Patients for whom no radical treatment is intended should not routinely be imaged.
- MRI or CT could be considered in patients who are suitable for radical local therapy.
- For assessment of nodal disease, CT and MRI are of equal diagnostic value.
- MRI is superior in assessment of local disease extent.

11.5.2 Treatment options should be discussed with the patient, ideally within a "joint" clinic setting including Urological Surgeon, Clinical Oncologist and Specialist Nurse. Comorbidity issues should be recognised during the decision making process, as should the emerging evidence regarding the benefit of adjuvant hormonal treatment.
11.5.3 Clinical T3 N0 M0 disease can be considered for radical radiotherapy with adjuvant hormonal therapy or radical prostatectomy. The options of orchidectomy, LHRH and antiandrogens should be discussed, including the indications, benefits and side effects of these modalities.

11.5.4 Watchful Waiting with delayed hormonal treatment on progression

Appropriate in asymptomatic patients with significant co-morbidity, poor life expectancy or who are unwilling to accept the side effects of treatment.

Immediate Hormone monotherapy

Indicated in symptomatic and asymptomatic patients. The options of orchidectomy, LHRH and antiandrogens should be discussed, including the indications, benefits and side effects of these modalities.

11.6 MANAGEMENT OF T3b/4 DISEASE

11.6.1 With the exception of surgery the management of T4 N0 M0 is the same as the above.

11.6.2 Locally Advanced Prostate Cancer Presenting With Acute Retention

If the first presentation is acute urinary retention, a channel TURP may be appropriate and could be combined with bilateral orchidectomy, particularly in the elderly patient. Alternatively, the patient may be started on hormonal manipulation in combination with a long-term catheter. A trial without catheter may be attempted in 6-8 weeks.

11.7 METASTATIC DISEASE (N+ / M+)

11.7.1 At diagnosis of metastatic prostate cancer, all patients, either asymptomatic or symptomatic, should be offered androgen deprivation therapy (ADT).

11.7.2 Patients with a satisfactory PSA response should subsequently be followed up every 3-6 months by a clinical member of the MDT. Stable patients can have their follow up in a dedicated specialist nurse run prostate cancer clinics or in the community according to NSSG approved protocols (to be agreed).

11.8 CASTRATION RESISTANT PROSTATE CANCER (CRPC)

11.8.1 Definition of CRPC:

In the presence of castrate level serum testosterone, any one of the following would indicate the CRPC in a patient with previously stable disease:

(a) 3 consecutive rises in PSA.
(b) A single (confirmed) large rise in PSA
(c) Clinical signs of progression
11.8.2 Action to be taken on diagnosis CRPC

(a) All patients should be reassessed by a core member of the MDT
(b) Patients suitable for second or third line treatment should be restaged and referred to Oncology

11.8.3 The treatment of CRPC

The following are options:

(a) 2nd line Hormonal Therapy (Patients who have failed total androgen blockade should have their anti-androgen withdrawn).

(b) Steroids

(c) Specific other treatments for metastatic pain may be considered in appropriate patients e.g. local radiotherapy, Strontium, hemi-body irradiation, and bisphosphonates.

(d) All patients should be offered palliative support and adequate pain control and additional care when symptomatic. A combined management approach in association with non-surgical Oncologists and Palliative care specialists may be required, including referral to specialised pain clinics.

11.8.4 BISPHOSPHONATES

Eligibility criteria for bisphosphonates
All of:
- Metastatic bone disease in CRPC patients
- A skeletal event (palliative radiotherapy, fracture, spinal cord compression, bone pain)
- Adequate renal function (calculated creatinine clearance >60 prior to first cycle and no change in serum creatinine subsequently)

Regime
- Zoledronate 4mg i.v. over 15 minutes (dose reductions for renal impairment
- 4-12weekly (dependant on urinary NTX levels)
- Maximum of 6 cycles.
- Oral calcium + Vitamin D for duration of treatment (e.g. AdCal D3).

11.9 Chemotherapy

Systemic chemotherapy should be considered for selected patients who have symptomatic progressive CRPC.
Eligibility for clinical trial should be considered
This should be administered by a specialised urological non-surgical oncologist (Dr Peter Kirkbride, Dr Cath Ferguson, Dr Jackie Martin, Dr Linda Evans or Dr Omar Din).
11.9.1 Eligibility

- CRPC
- Evidence of progressive disease (clinical, scan, PSA)
- WHO PS 2 or better
- Adequate marrow reserve – WCC >3.5, N >1.5, Plt >100
- No significant cardiac history

11.9.2 Docetaxel

- 1st line therapy unless patient too frail.
- 75mg/m² q 3 weekly.
- Dexamethasone 8mg po 12, 3 and 1 hr pre chemotherapy infusion
- All pts have continuous low-dose Prednisolone, 10mg/day, throughout treatment
- Reassess response after 2 cycles.
- Up to 10 cycles.

11.9.3 Mitoxantrone

- Used in pts unwilling to have Docetaxel, or not fit enough.
- Usual dose 12mg / m² q 3 weekly although dose reductions may be considered for patients with inadequate marrow reserve
- Reassess response after 2 cycles.
- Up to 6 cycles.
- Given with prednisolone 10 mg OD.

11.10 SPINAL CORD/ CAUDA EQUINA COMPRESSION

These patients will require urgent imaging of the spine (usually MRI) and immediate referral for either irradiation or surgical spinal decompression. The latter is the preferred option, especially in patients who are mobile and who have compression at only one level. Such patients should be urgently discussed with the spinal surgeons. The immediate results can be excellent and neurological deficits may be reversed.

Patients not eligible for surgery should be discussed with Clinical Oncology and if appropriate will be transferred to WPH for urgent radiotherapy, usually 20 Gy in 5 fractions.

NOTE: In the hormone naïve patient immediate androgen ablation should be used (e.g. orchidectomy).

High dose steroids (dexamethasone 16mg per day with PPI) can be used temporarily.
11.11 RENAL FAILURE AND BILATERAL URETERIC OBSTRUCTION

11.11.1 Urinary diversion can be performed as an emergency with insertion of unilateral or bilateral nephrostomies. Antegrade stenting is often possible.

11.11.2 In the case of CRPC and ureteric obstruction. Nephrostomies may be offered after careful discussion with the patient and his family.
12.0 Supportive and palliative care

Supportive and palliative care are cross-cutting issues that affect all cancer patients, at all stages from pre-diagnosis to survivorship, or death. The NICE guidance on supportive and palliative care for adults with cancer (2004) gives definitions of these two terms and tries to explain their distinctions and overlaps. However, there is still considerable confusion and unclear thinking about these concepts, with the important consequence that many patients are being referred inappropriately, too late or not at all to specialist services.

The Sheffield Model for Supportive Care clarifies this area and should be seen as the model which applies to North Trent Cancer Network (Ahmedzai, Walsh, Seminars in Oncology, 2001.)

In essence, supportive care is a wide range of specialist services which work as a ‘virtual team’ to help the patient (and family) cope with the effects of disease, of treatment-related side-effects (acute and long-term) and with the psychosocial and rehabilitation needs for both long-term survivors with cancer and those who are progressing.

Palliative care is a somewhat more restricted range of services, often configured as an actual team, which focuses on symptoms, psychological, social and spiritual issues for patients and their families, when the disease is progressive and will likely lead to death within 6-12 months.

In many acute settings, palliative care teams provide both supportive and end of life care; in community and hospices, they concentrate almost exclusively on end of life care. Specialists who contribute to supportive care for cancer patients, e.g. dieticians, SALT, other AHPs, pain clinic staff, are scattered across a hospital and are often not coordinated. They provide only limited input in community and hospices. It is ideal for cancer MDTs to have their own dedicated supportive care professionals, or at least dedicated sessions from a trust service.

All patients, regardless of the stage of disease or estimated prognosis, are candidates for supportive care and all those who are nearing the end of life are candidates for palliative care. The difficulty arises in identifying which patients need the different specialists inputs of supportive care at which stage. In North Trent we have developed a screening questionnaire – SPARC, which provides a ‘holistic’ assessment of a patient’s needs for symptom control, psychological, social and spiritual issues as well as needs for information, help with daily living, making plans, and other areas. It is recommended that this instrument is used by clinics and wards to identify patients who need supportive and palliative care. An alternative tool is the ‘Distress Thermometer’ – the North Trent Supportive and Palliative Care Group is producing guidelines to advise MDTs to choose one or other of these tools, as well as other more specific questionnaires for complex pain, psychological distress, etc.

Most acute settings in North Trent have a team of palliative care nurse specialists. Only 4 out of the 5 localities have consultant-level input into these teams. Furthermore, only 3 of out 5 localities have consultants with regular sessions in hospices.
The Sheffield/Chesterfield/Rotherham localities have a 24/7 medical on-call service with first-on registrars (covering Sheffield and Chesterfield) and second-on consultants (covering all three localities). The consultants also provide an informal second-on call service for the specialist palliative care teams in Barnsley and Doncaster/Bassetlaw.

Ideally a member of each trust palliative care team should attend the Urological cancer MDT. However there are currently insufficient staff to support this. Moreover, MDTs are not always configured to pick up and discuss supportive and palliative care issues within the normal agenda. It is recommended that an alternative arrangement is made to cover this by:

1. Routine use of a supportive care screening tool, e.g. SPARC or Distress Thermometer by all clinicians in both in-patient and out-patient settings.

2. Clearly identified routes of referral between the Urology MDT, usually via the CNS but also via medical staff, to a named person in the local palliative care MDT.

3. The ability to timetable discussion of complex supportive or palliative care issues for specific patients in the MDT meeting, e.g. to discuss palliative surgery, difficult pain or respiratory management, transfer to hospice or other settings.

It is recommended that advance care planning for all patients is started as soon as feasible after the diagnosis of an incurable cancer, including the patient’s preferences for place of care in the terminal stage and the use or rejection of interventional medical support, e.g. artificial hydration, CPR.
13.0 Teenager and young adults

In January 2009 specific referral pathways were developed for teenagers (16-18 years) and young adults (19 -24 years) into the TYA MDT. The Urology NSSG has agreed age appropriate referral into these pathways. These documents were updated and approved by the NSSG on 11.7.12 and are available via the NTCN website.
14.0 Rehabilitation Pathway

The NSSG approved the urological rehabilitation pathway on 3 March 2010.