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# **Urology Cancer Pathways: Overview**

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Working in partnership, we will achieve world class cancer outcomes for the population we serve



# **Cancer Waiting Times Standards**

### Cancer Guidelines – Standards



**14 day standard** – patient must have first seen appointments within 14 days from urgent referral for suspected cancer made by GP (or GMP,GDP or Optometrist).

- **28 Day Faster Diagnosis (FDS)** all patients referred on a TWR pathway need to be a given a diagnosis of cancer or non-cancer by day 28.
  - Diagnosis must be communicated to patient either face to face appointment (for cancer diagnosis), telephone appointment or virtual review/results letter (for noncancer diagnosis only).
  - Diagnosis to the patient is the 28 Day FDS clock stop
  - There may be a scenario where patients go straight to treatment. In this case the 'decision to treat' date is the 28 Day FDS clock stop.

### Cancer Guidelines – Standards



- 31 day first treatment standard patient must have first definitive treatment within 31 days from when the decision to treat (DTT) was made.
- 31 day subsequent treatment standard patient must have subsequent treatment within 31 days from when the decision to treat/earliest clinically appropriate date to the start of second or subsequent treatment(s) is made. This includes undertaking surgery or initiating drug treatment or radiotherapy.
- 62 day treatment standard patient must have first definite treatment within 62 days from when the referral for suspected cancer was made. This also includes referrals made via Consultant upgrades.

#### Clock starts



- The starting point for the two week wait is the receipt of the referral by the provider who will first see the patient.
- This original referral is received either:
  - directly from the GP (GMP,GDP or Optometrist)
  - ➤ via the NHS e-Referral Service, in which case the Unique Booking Reference Number (UBRN) conversion date for an appointment marks the start of the period; or
  - > via an alternative electronic system.
- Other sources of referral include Consultant upgrades and referrals from Screening Centres (screening centres do not apply to Urology).
- A Consultant upgrade referral is when a Consultant or authorised member of the clinical team, can upgrade a patient if cancer is suspected.

## Clock stops



#### 14 day clock stop:

The two week wait end point is either:

- > when the patient is seen for the first time by a consultant (or member of their team) following the referral receipt.
- ➤ when the patient is seen for the first time in a diagnostic clinic ('straight to test' pathway') following the referral receipt. This can include CT, MRIs, Scopes etc.

#### 28 day clock stop:

> The date a diagnosis of cancer or non-cancer is communicated to the patient

#### 62-day and 31-day clock stop:

➤ These periods end at the first definitive treatment start date. This is defined differently for different treatments



# **Types of Urology Cancer**

# Types of Urology Cancer



- Bladder considered high risk. Cancer can be muscle invasive or non muscle invasive.
- Prostate slower growing cancer
- Kidney/Renal (including renal pelvis or uretus)
- **Testicular** considered high risk. Rare cancer and follows 31 day pathway. Patients should have OPA by day 7.
- Penile



## **Bladder Cancer Overview**

# Bladder Cancer: Symptoms



- Main symptom of bladder cancer is blood in your urine (haematuria): this can either be visible or found on checking urine with a dip test (non-visible or dipstick)
- Other symptoms of bladder cancer can include:
  - > passing urine very often (frequency)
  - > passing urine very suddenly (urgency)
  - > pain or a burning sensation when passing urine
  - > weight loss
  - > pain in your back, lower tummy or bones
  - > feeling tired and unwell

These 3 symptoms can also be caused by a urinary infection (so this needs to be ruled out first)

- These symptoms are much more likely to be caused by other conditions rather than cancer. For men, the symptoms could be caused by an enlarged prostate gland.
- Most people with these symptoms do not have bladder cancer.

### Bladder Cancer: Risk factors



Risk factors in developing bladder cancer include:

- Smoking
- Infections and long lasting bladder irritation
- Chemicals at work e.g. Arylamines, Polycyclic aromatic hydrocarbons
- Having bladder cancer before
- Other medical conditions e.g. Systemic sclerosis, Kidney transplant
- Family history

#### Bladder Cancer: Criteria for 2ww referral



- A 2ww referral should be made if:
  - ➤ Adults aged ≥45 with visible haematuria that persists or recurs after successful UTI treatment
  - ➤ Adults aged ≥45 with visible haematuria without UTI
  - ➤ Adults aged ≥60 with unexplained non-visible haematuria and dysuria (pain on passing urine) or a raised white cell count on a blood test

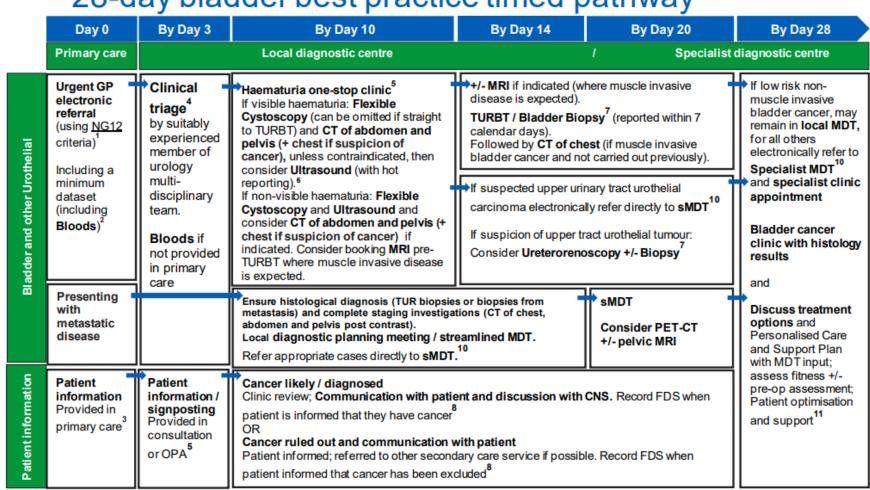
 Patients will also need a blood test (FBC & U&Es within 3 months) and ultrasound for nonvisible haematuria

# Bladder Cancer: Best Practice Timed Pathway



#### DRAFT BPTP - needs sign off

#### 28-day bladder best practice timed pathway



### **Bladder Cancer: Overview**



- Bladder Cancer Types 2 types: Transitional Cell Cancer/Carcinoma (which is most common) and adenocarcinoma. Bladder cancers will either be:
  - ➤ Non-muscle invasive contained within the bladder's inner lining
  - ➤ Muscle-invasive cancer cells have spread beyond the inner lining of the bladder and into the muscle layer. There is a risk that cancer could spread to other areas of the body if it is not treated.
- Initial Investigations Patients will undergo one or a combination of:
  - > Ultrasound scan (for non visible haematuria) procedure that uses high-frequency sound waves to create an image of part of the inside of the body.
  - > CT scan (for visible haematuria) a computerised tomography (CT) scan uses X-rays and a computer to create detailed images of the inside of the body.
  - Flexible Cystoscopy (majority undertaken as outpatient procedures) examination of your bladder which is carried out using a flexible telescope (cystoscope) and passed via your urethra and into your bladder.

### **Bladder Cancer: Overview**



- **Treatment** –First Definitive Treatments (FDT) is likely to be:
  - > TURBT A trans urethral resection of bladder tumour (TURBT) is usually the first treatment for early/non-muscle invasive bladder cancers.
  - > Surgery radical treatment in the form of Cystectomy. This is an operation to remove all or part of your bladder and is one of the main treatments for muscle invasive bladder cancer.
  - > Chemotherapy –uses anti cancer (cytotoxic) drugs to destroy cancer cells. This includes intravesical chemotherapy (via BCG or Mitomycin) or systemic chemotherapy
  - > Radiotherapy uses high energy x-rays to destroy bladder cancer cells, and usually forms part of the treatment for muscle invasive bladder cancer.



# Prostate Cancer: Symptoms



- Prostate cancer does not usually cause symptoms in the early stages.
- To cause symptoms, the **cancer needs to be big enough to press on the urethra** that carries urine from the bladder to the penis or to invade into the urinary bladder above: this can cause urinary issues and blood in urine
- **Urinary symptoms** e.g. difficulty passing urine, are rarely caused by prostate cancer and are much more likely caused by benign prostatic hyperplasia (BPH). BPH is a common condition in men as they get older, as the prostate gland enlarges with age.
- If prostate cancer has already spread to other parts of the body (advanced or metastatic prostate cancer), it can cause symptoms such as:
  - ➤ back or bone pain that doesn't go away with rest
  - > tiredness
  - > weight loss for no reason

#### Prostate Cancer: Risk factors



There are three main risk factors for getting prostate cancer, which are things you can't change. These are:

- getting <u>older</u> it mainly affects men aged 50 or over
- having a <u>family history of prostate cancer</u>; two-fold risk if one first relative affected and five-fold risk if two first relatives affected
- being **black**; the incidence is about one in four as opposed to one in eight in all men

#### Prostate Cancer: Criteria for 2ww referral



Consider a prostate-specific antigen (PSA) test and digital rectal examination to assess for prostate cancer in people with:

- > any lower urinary tract symptoms, such as nocturia, urinary frequency, hesitancy, urgency or retention <u>or</u>
- > erectile dysfunction or
- > visible haematuria.
- A 2ww referral should be made if:
  - > if prostate feels malignant on digital rectal examination
  - ➤ if their PSA levels are above the indicated threshold for their age

| PSA AGE-SPECIFIC THRESHOLDS |                               |  |  |  |
|-----------------------------|-------------------------------|--|--|--|
| AGE (years)                 | AGE (years) PSA VALUE (ng/ml) |  |  |  |
| 40-49                       | ≥2.5                          |  |  |  |
| 50-69                       | ≥3                            |  |  |  |
| ≥70                         | ≥5                            |  |  |  |

 Patients will also need a blood test (PSA, U&Es/eGFR) and urine dipstick (+ MSU result if dipstick positive) within 3 months

# Prostate Cancer: Best Practice Timed Pathway RM Partners West London Cancer Alliance



| Day 0  | Day 0 to 3  | Day 3 to 14   |   |   | Day 21            | Day 28   |
|--|---|---|---|---|-------------------|--|
| Urgent GP<br>referral<br>Including<br>locally<br>mandated<br>information | Clinical triage<br>Based on local<br>protocol   | mpMRI before<br>biopsy  | Prostate<br>biopsy<br>(by day 9)  | Further<br>investigations<br>If required for<br>staging | sMDT <sup>5</sup> | Communication<br>to patient on<br>outcome<br>(cancer<br>confirmed or all-<br>clear provided) |
| Patient<br>information<br>Provided in<br>primary care                    | Unsuitable for<br>cancer<br>pathway<br>Men with UTI /<br>positive MSU to<br>be investigated | Outpatient<br>clinic<br>Review mpMRI<br>and plan<br>investigations                      | Outpatient<br>clinic<br>Review biopsy<br>and plan further<br>management       |   |                   |  |
|  | off pathway   |   |   |   |                   |  |
|  |   | No suspicious<br>lesions<br>reported<br>Some cases<br>may be<br>removed from<br>pathway | Negative<br>biopsy<br>Imaging review<br>meeting<br>(radiology and<br>urology) |   |                   |  |



- Initial Investigations Patients will undergo :
  - ➤ Multi-parametic MRI (mpMRI) scan special type of scan that creates more detailed pictures of the prostate, than a standard MRI scan by combining four different types of image. During the scan, the patient will be injected with a contrast agent which allows for a clearer picture of the prostate. Images from the MRI are used by the Radiologist to give a n PI-RADs or Likert score, which uses a 1-to-5 scoring system.
  - ➤ Not all patients require a TP biopsy. Decision to biopsy will be made in accordance with PSA density and PI-RADs/LIKERT score.

| Risk Group                                    | Standard of Care Guidelines   |
|---|---|
| PI-RADS or Likert 1–2 with PSA density < 0.12 | No biopsy required  |
| PI-RADS or Likert 1–2 with PSA density ≥ 0.12 | No biopsy required usually. Transperineal Biopsy can be advised if there are other risk factors e.g., family history or ethnicity risk. |
| PI-RADS or Likert 3                           | If PSA density <0.12, then no biopsy usually required. If PSA density >0.12, suggest transperineal biopsy                               |
| PI-RADS or Likert 4-5                         | Recommend transperineal biopsy  |



➤ Transperineal Prostate (TP) Biopsy – is a procedure which looks for cancer cells in the prostate. A needle is placed into the prostate through the skin behind the testicles (perineum). Biopsy samples are taken which are sent to Pathology Labs for tissue analysis.

- > Other scans may be needed to identify metastatic disease. These could be a:
  - PSMA PET scan to assess if and where prostate cancer has spread outside of the prostate gland e.g. Lymph nodes
  - Bone Scan to assess whether any cancer cells have spread to the patient's bones



Prostate cancer is divided into 5 prognostic groups, known as the Cambridge Prognostic Group (CPG).

There are 5 groups (from CPG 1 to CPG 5) and a patients CPG depends on:

- ➤ the tumour stage (T stage from the TNM staging)
- ➤ what the cancer cells look under a microscope (Grade Group or Gleason score)
- > your PSA blood test level

CPG helps determine if treatment is needed, and what the type of treatment needed.

| Cambridge<br>Prognostic Group | Criteria  |
|-------------------------------|---|
| 1                             | Gleason score 6 (grade group 1)  and  prostate-specific antigen (PSA) less than 10 microgram/litre  and  Stages T1-T2   |
| 2                             | Gleason score 3 + 4 = 7 (grade group 2) or PSA 10 microgram/litre to 20 microgram/litre and Stages T1–T2  |
| 3                             | Gleason score 3 + 4 = 7 (grade group 2) and PSA 10 microgram/litre to 20 microgram/litre and Stages T1–T2 or Gleason 4 + 3 = 7 (grade group 3) and Stages T1–T2 |
| 4                             | One of: Gleason score 8 (grade group 4), PSA more than 20 microgram/litre, Stage T3   |
| 5                             | Two or more of: Gleason score 8 (grade group 4), PSA more than 20 microgram/litre, Stage T3 or Gleason score 9 to 10 (grade group 5) or Stage T4                |



- **Treatment** Treatments are offered in line with CPG Grouping. First Definitive Treatment (FDT) is likely to be:
  - > Surgery radical treatment to remove the prostate: radical or robotic prostatectomy
  - > Radiotherapy uses high energy x-rays to destroy cancer cells. This could be in the form of external radiotherapy or internal radiotherapy (e.g. Brachytherapy)
  - > Chemotherapy uses anti cancer (cytotoxic) drugs to destroy cancer cells.
  - ➤ Hormone Therapy blocks or lowers the amount of testosterone in the body, as Prostate cancer usually depends on testosterone to grow.
  - ➤ Active Surveillance cancer is monitored via Specialist teams until there is any sign that cancer is beginning to change or grow.
  - ➤ Clinical trials Treatment, such as High Intensity Focused Ultrasound (HIFU) or Cryotherapy could be offered as part of a clinical trial.



## **Renal Cancer Overview**

# Renal (Kidney) Cancer: Symptoms



- Most people who are diagnosed with kidney cancer do not have any symptoms and the cancer is found 'incidentally' when patients attend for a scan to look for something else (eg an ultrasound looking for stones in the gall-bladder or kidney)
- When symptoms occur, these could include:
  - ➤ blood in the urine most common symptom
  - > a lump or mass in the kidney area
- Other, more vague symptoms could be:
  - > weight loss
  - > a high temperature and very heavy sweating
  - > a pain in your back on one side (below the ribs) that won't go away
  - > tiredness
  - > loss of appetite
  - > a general feeling of poor health

These vague symptoms can be caused by many other conditions and most people who have them will 26 not have cancer.

### Renal Cancer: Risk factors



#### Risk factors in developing renal cancer include:

- High BMI
- Smoking
- Kidney disease
- Faulty genes and inherited conditions

- Family history
- High blood pressure
- Thyroid cancer
- Diabetes (Type 1)

#### Renal Cancer: Criteria for 2ww referral



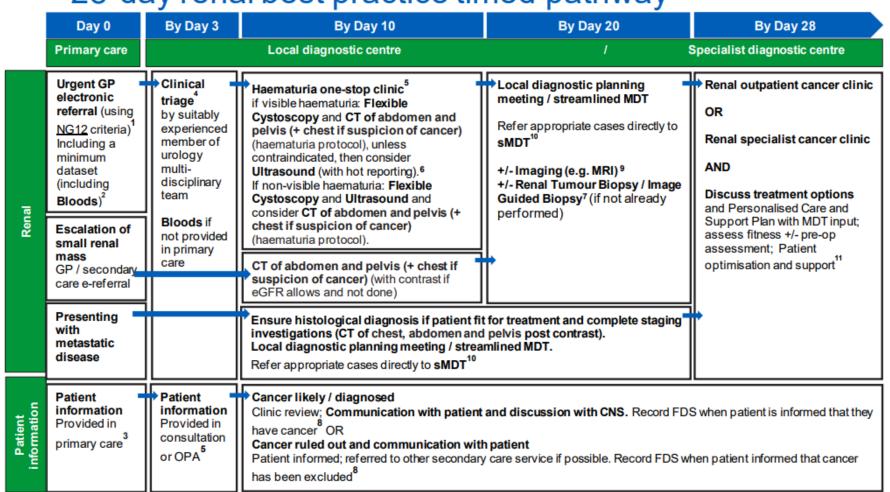
- A 2ww referral should be made if:
  - → if patient is aged 45 and over and has unexplained visible haematuria without urinary tract infection or
  - ➤ if patient is aged 45 and over and has visible haematuria that persists or recurs after successful treatment of urinary
  - > abnormal ultrasound suggestive of renal cancer
- Patients will also need a blood test (FBC and U&Es) and ultrasound within 3 months.

# Renal Cancer: Best Practice Timed Pathway



#### DRAFT BPTP - needs sign off

28-day renal best practice timed pathway



#### Renal Cancer: Overview



- Initial Investigations Patients will undergo :
  - ➤ CT scan a computed tomography test that uses x-rays and a computer to create detailed pictures of the inside of your body. This is usually in the form of a CT urogram for symptoms of visible haematuria.
  - ➤ CT or ultrasound guided biopsy a procedure to extract tissue samples, with the help of a scan to help identify exactly where the tumour is. This is usually undertaken via local anaesthetic.
- Further investigations may be undertaken to stage the cancer including:
  - > MRI scan to check the size and location of the cancer
  - ➤ Chest Xray to check general health (to ensure they are well enough to have a particular treatment). It will also show whether any cancer cells have spread to the lungs.
  - > Bone scan to show up changes or abnormalities in the bones

### Renal Cancer: Overview



- **Treatment** First Definitive Treatment (FDT) is likely to be:
  - > Surgery This includes radical or partial nephrectomy. This is the main treatment for kidney cancer that hasn't spread to another part of your body
  - > Cryotherapy kills cancer cells by freezing them. It can cure small, early stage kidney cancers
  - ➤ Radiofrequency Ablation (RFA) uses radio waves to kill cancer cells. It and can be used in cases where:
    - Patient has small, early stage kidney cancer but cannot have surgery,
    - Patient has more than one small tumour, or tumours in both kidneys
    - Patient has advanced kidney cancer, where it can help to shrink a tumour and control symptoms.
  - > Radiotherapy uses high energy x-rays to destroy cancer cells. This is not often used for kidney cancer but can be used for help control the symptoms of advanced cancer or to shrink a larger cancer.
  - ➤ Chemotherapy can be used for a type of kidney cancer called transitional cell cancer (TCC). TCC grows in the kidney, bladder or the ureter.



### **Testicular Cancer Overview**

# Testicular Cancer: Symptoms



- The most common symptom of testicular cancer is a lump or swelling in the testicle.
- Symptoms of testicular cancer can include:
  - > a lump or swelling in part of one testicle
  - > a testicle that gets bigger
  - > a heavy scrotum
  - > discomfort or pain in your testicle or scrotum

#### Testicular Cancer: Risk factors



#### Risk factors in developing penile cancer are:

- Undescended testicles (cryptorchidism)
- Abnormal cells in the testicle (germ cell neoplasia in situ)
- Family history brothers or sons of men who have had testicular cancer have an increased risk
- Previous testicular cancer
- Abnormality of the penis and urethra (hypospadias)
- HIV/Aids
- Ethnicity white men in the UK have a higher risk of testicular cancer than men from other ethnic groups

#### Testicular Cancer: Criteria for 2ww referral



- A 2ww referral should be made if:
  - > Patient has a solid intra-testicular lump
  - > if patients has a non-painful enlargement or change in shape or texture of the testis
  - ➤ abnormal testicular ultrasound suggestive of cancer

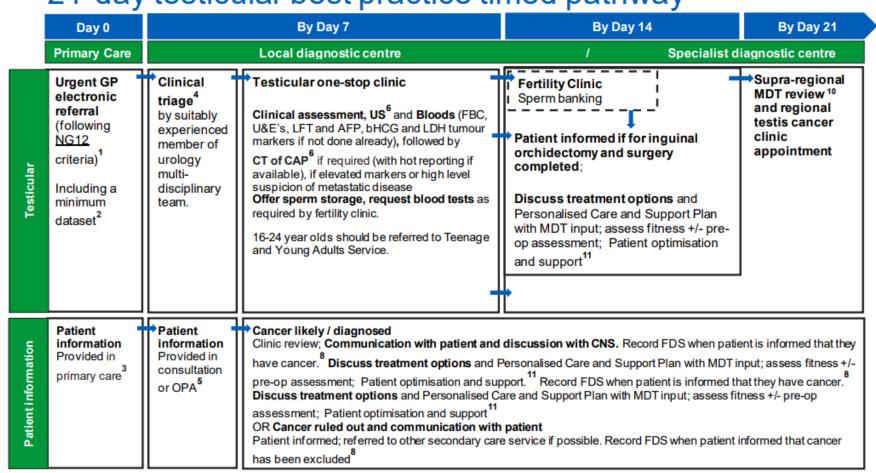
Patients will also need a testicular ultrasound prior to referral, where possible.

### Testicular Cancer: Best Practice Timed Pathway



#### DRAFT BPTP - needs sign off

#### 21-day testicular best practice timed pathway



## Testicular Cancer: Overview



- **Testicular Cancer Types** Most testicular cancers are a type called germ cell tumours. The 2 main types of testicular germ cell tumours are:
  - > Seminomas
  - ➤ Non-seminomas includes teratoma (post pubertal type), embryonal carcinoma, choriocarcinoma and yolk sac tumours (post pubertal type)
- Rare Testicular Cancer Types These are:
  - > Lymphoma in the testicle
  - > Sex cord stromal tumours

## Testicular Cancer: Overview



- **Initial Investigations** Patients will undergo:
  - > Ultrasound scan this test uses high frequency sound waves to create a picture of a part of the body to show up changes, including abnormal growths.
  - > Tumour markers Beta HCG, AFP, LDH: blood tests that are often elevated in testis cancer
- Further investigations may be undertaken to stage the cancer including:
  - > CT scan a computed tomography test that uses x-rays and a computer to create detailed pictures of the inside of your body. This is usually to check if testicular cancer has spread to lymph nodes or to other parts of your body.
  - > MRI scan uses magnetism and radio waves to create cross sectional images of the body. This is to find out whether cancer has spread to the brain or spine or to provide more information if the ultrasound scan does not show whether or not there is a cancer.

## Testicular Cancer: Overview



- **Treatment** First Definitive Treatment (FDT) is likely to be:
  - > Surgery Orchidectomy to remove the testicle, is usually the first treatment for testicular cancer.
  - Chemotherapy uses anti cancer (cytotoxic) drugs to destroy cancer cells.
    Chemotherapy is a common treatment if there is a higher risk of cancer coming back, or if cancer has already spread
  - ➤ Radiotherapy uses high energy x-rays to destroy cancer cells. This may be used if seminoma testicular cancer has spread to the lymph glands at the back of the abdomen.
- **Sperm banking prior to treatment** this will be offered to patients who undergo chemotherapy or radiotherapy, to preserve future fertility.



## **Penile Cancer Overview**

## Penile Cancer: Symptoms



- The most common symptom of penile cancer is a growth, an ulcer or a rash on the penis.
- Symptoms of penile cancer include:
  - > a growth or sore on the penis that doesn't heal within 4 weeks
  - > bleeding from the penis, including from under the foreskin
  - > foul smelling discharge. This is a less common cause of penile cancer
  - > a rash on the penis
  - > difficulty in drawing back your foreskin (phimosis)
  - > changes to the colour of the penis or foreskin.

## Penile Cancer: Risk factors



Risk factors in developing penile cancer are:

- Human papilloma virus (HPV)
- Age more common in men aged 50 or over
- Having a weakened immune system
- Uncircumcised men
- Psoriasis treatment
- Smoking

## Penile Cancer: Criteria for 2ww referral



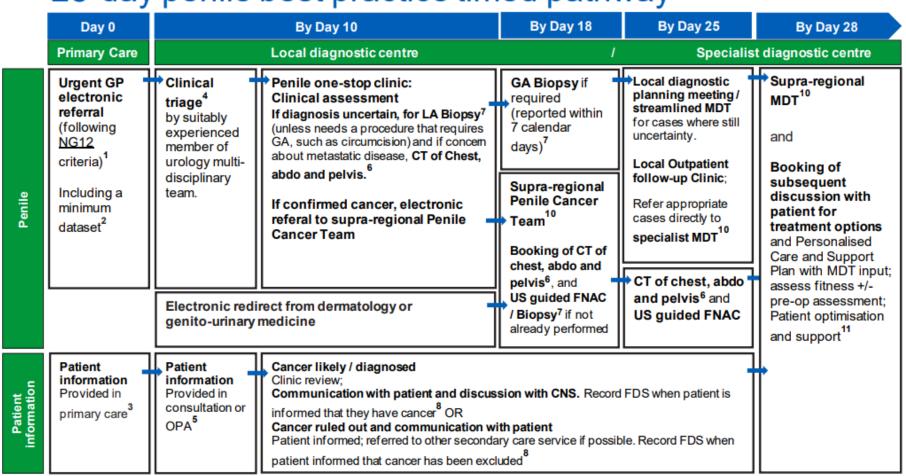
- A 2ww referral should be made if:
  - > Patient has a penile mass or ulcerated lesion, when a sexually transmitted infection has been excluded as a cause
  - ➤ Patient has a persistent penile lesion after treatment for a sexually transmitted infection has been completed.
  - > Patient has unexplained or persistent symptoms affecting the foreskin or glans

## Penile Cancer: Best Practice Timed Pathway



#### DRAFT BPTP - needs sign off

### 28-day penile best practice timed pathway



## Penile Cancer: Overview



- Initial Investigations Patients will undergo :
  - > Penile biopsy removing a sample of tissue from the affected area of the penis. This can be in the form of:
    - an incisional biopsy
    - o a punch biopsy,
    - an excisional biopsy
- Further investigations may be undertaken to stage the cancer including:
  - > CT scan a computed tomography test that uses x-rays and a computer to create detailed pictures of the inside of your body. This is usually to check if cancer has spread.
  - ➤ MRI scan uses magnetism and radio waves to create cross sectional images of the body, to show where the cancer is in the penis and help Clinicians to understand the risk of it spreading

## Penile Cancer: Overview



- **Treatment** First Definitive Treatment (FDT) is likely to be:
  - > Surgery This can consist of:
    - Circumcision removing the foreskin
    - Glans resurfacing removes the top layers of tissue from the tip (glans) of the penis and covers the area with a skin graft
    - Wide local excision removes the cancer along with a border of healthy tissue around it
    - Glansectomy removal of the glans (head) of the penis
    - Partial or Total Penectomy remove part (partial) or all (total) of the penis
  - ➤ Chemotherapy uses anti cancer drugs to destroy cancer cells. This can be administered either intravenously or via a combination of drugs.
  - Radiotherapy uses high energy x-rays to destroy cancer cells. This may be used if seminoma testicular cancer has spread to the lymph glands at the back of the abdomen.



## **MDT**



# **Urology Cancer MDT**

## Urology MDT Management



- All patients who have a diagnoses of cancer MUST be discussed at an MDT
- In order for the Urology MDT to be quorate the following individuals must be in attendance:
  - Consultant Urologists
  - Radiologists
  - Pathologists
  - > MDT Coordinator
  - > CNS
  - Oncologists



## **Data Collection**

#### **Data Collection**



**Cancer Waiting Times standards** - collected and submitted by Trusts via NHS Digital platform.

**Cancer Outcomes and Services Dataset** (COSD) - collected and submitted by Trusts. Key fields for collection are:

- MDT Discussion
- Date of diagnosis (clinically agreed date)
- CNS presence at diagnosis
- Staging (TNM)
- Treatment

National Prostate Cancer Audit (NPCA) - clinical information about the treatment of all patients newly diagnosed with prostate cancer and information about their outcomes.

#### **Data Collection**



- Radiotherapy Data Set (RTDS) requires all NHS Acute Trust providers of radiotherapy services in England to collect and submit standardised data monthly against a nationally defined dataset
- Systemic Anti-Cancer Therapy (SACT) collects systemic anti-cancer therapy activity from all NHS England providers, s to understand treatment patterns and outcomes on a national scale