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Introduction

The London Cancer Alliance (LCA) Gynaecological Cancer Clinical Guidelines provide a practical multidisciplinary guide for the diagnosis, treatment and holistic care and support of patients with gynaecological cancer across the LCA.

These guidelines have been developed by the LCA Gynaecology Oncology Pathway Group to ensure that care throughout the LCA conforms to national and international best practice. They draw on the expertise of a range of clinicians from across the LCA provider organisations, and subsequently reflect the wider gynaecological cancer pathway. They provide evidence-based clinical information and protocols on all aspects of the gynaecological cancer pathway, while allowing sufficient flexibility to reflect good local practice, and should therefore be used by clinicians to inform the treatment and care they provide.

The LCA Gynaecological Cancer Clinical Guidelines have been adapted from, and supersede, guidelines produced by the former cancer networks in north west, south east and south west London, and have been updated to reflect changes and developments in practice. They also take into consideration the National Cancer Peer Review Programme Manual for Cancer Services: Gynaecology Measures Version 1.0 January 2014.¹

The LCA guidelines are designed to be used by all healthcare professionals in Trusts within the LCA who are involved in the care of the gynaecological cancer patient. They have been developed to take into account the wide range of clinical experience of the user and the different clinical settings in which healthcare professionals work. The guidelines are intended to assist in the initial assessment, investigation and management of patients. Adoption of the LCA guidelines will allow widespread implementation of up-to-date and evidence-based management of gynaecological cancer patients, and will assist in the provision of a consistently high standard of care across the LCA.

All Trusts are expected to be able to provide the standard of care detailed in these guidelines. These guidelines will be reviewed on an annual basis in line with guidance from the National Institute for Health and Care Excellence, the British Gynaecological Cancer Society, and other national and international guidance, as well as significant new research publications, to ensure that they continue to reflect best practice.

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Executive summary

The London Cancer Alliance (LCA) Gynaecological Cancer Clinical Guidelines combine the best features of earlier network protocols, and have been developed in agreement with clinicians across the LCA. The guidance combines evidence-based and best practice recommendations with the aim of ensuring that there are equitable high-quality services across the LCA. The guidelines are multidisciplinary and cover imaging, pathology, surgery, radiotherapy, systemic therapy and survivorship.

Chapter 1 provides an overview of the gynaecology oncology services provided in cancer units and specialist centres. The clinical indications and referral pathways for urgent assessment of patients are outlined in Chapter 2. Accurate data collection is essential to monitor outcomes, and the collection of this information, particularly clinical data, remains the responsibility of the members of the multidisciplinary team with support from a data manager. The LCA Pathway Group is currently developing specific quality measures for gynaecological cancer in addition to the core datasets described in Chapter 3.

The diagnosis and management of ovarian, uterine, cervical, vaginal and vulval cancers are described in tumour-specific chapters (4 to 9). These chapters cover the options available to patients, including surgical intervention, chemotherapy, radiotherapy and palliative treatment.

In addition, diagnostic imaging requirements for each tumour type are described in further detail in Chapter 10, based on recommendations by the Royal College of Radiologists. This section considers the role of imaging at diagnosis, staging and follow-up. Chapter 11 outlines the considerations for radiotherapy treatment in gynaecological cancer and incorporates the role of advanced radiotherapy techniques including intensity-modulated radiotherapy and image guided brachytherapy.

Chapter 12 describes the options for management of women with a family history of cancer, while the importance of BRCA testing in women diagnosed with high-grade ovarian cancer irrespective of family history is also discussed in Chapter 4.

Chapter 13 outlines the role of the key worker, which is essential to ensuring a high-quality patient experience. Chapter 14 on survivorship details the ongoing care for patients living with their condition beyond treatment. Recommendations developed by the LCA Survivorship Group have been tailored specifically to meet the needs of patients with gynaecological cancer and offer clinicians advice on managing the patients’ needs holistically.

Some of the recommendations in these guidelines will be challenging to implement but, as the role of the LCA is to ensure that world-class quality of care is delivered for its patients with cancer, it is anticipated that provider organisations within the LCA will use these guidelines as a tool to support change improvement. During the coming months, the clinicians will develop standards and measures against which organisations can be assessed.
1 The Structure of Gynaecology Oncology Services

The optimal management of women with gynaecological cancer requires coordination between primary care, local gynaecology oncology teams based in cancer units and specialist teams based in cancer centres.

1.1 Cancer units

Cancer units have a full range of diagnostic and supportive services; they have arrangements for the close integration of primary and secondary care and the identification of appropriate rapid referral patterns for patients with symptoms indicating a high risk of a malignancy. Cancer units have site-specific consultations in clinics led by consultant specialists.

The responsibilities of the cancer unit relate to the initial diagnostic procedures such as clinical examination, biopsies of endometrial, cervical, vaginal and vulval lesions, ultrasound scanning and tumour marker assays. In addition, the designated lead gynaecologist should normally carry out surgery for early stage low-risk endometrial carcinoma, microinvasive cervical carcinoma (stage IA1) and for pelvic masses where the risk of malignancy is low.

Cancer units provide rapid assessment services for patients with pelvic masses or post-menopausal vaginal bleeding, a dedicated colposcopy service for the evaluation of abnormal cervico-vaginal cytology, and systems for data collection and audit within the 31-day cancer waiting times guidance for patients referred within the 2 week wait system.

Each unit has a lead gynaecology oncology surgeon who attends the specialist multidisciplinary team (MDT) at the referring cancer centre. There should be a dedicated clinical nurse specialist in each unit.

1.2 Cancer centres

The cancer centres provide a full range of cancer treatments encompassing treatment programmes for less common and rare cancers and those treatment regimens which are too specialised, technically demanding or capital intensive to be provided in the cancer unit. The centre may also act as a diagnostic unit for its local population, providing services for patients with more common cancers in the same way as the cancer unit.

Cancer centres are responsible for the coordination and conduct of clinical and basic research projects in the area of gynaecological and other malignancies.

Women with gynaecological cancers that are less common or more difficult to treat (ovarian cancers, later stage and aggressive histological sub-type endometrial cancers, cancers of the cervix, vulva or vagina) should be managed by a specialist multiprofessional gynaecology oncology team based at a cancer centre. This core team should liaise closely with designated lead gynaecologists at the cancer unit level.

The specialist gynaecology oncology team meets weekly to discuss the management of individual patients. There are joint or parallel clinics involving different disciplines, so that individual patients can be seen and discussed by two or more team members together. The team must maintain close contact with other professionals who are actively involved in supporting the patient or in carrying out the management strategy decided by the team.
Throughout the care of each patient and her family there should be a named clinician to whom she principally relates. Such arrangements should be explicit and clearly understood by patients and healthcare professionals, including the primary care team.
2 Referral for Suspected Gynaecological Cancer

2.1 Primary care referrals

Primary care referrals of patients with symptoms suspicious of gynaecological cancer should be made to the local cancer unit using the 2 week wait proforma. These patients will be seen at the next available rapid access clinic. Patients with symptoms who have been referred to other clinics will be triaged by the gynaecology team and redirected to the next available clinic.

**LCA urgent suspected cancer referral form**

The LCA Gynaecology Oncology Pathway Group is developing an LCA-wide urgent referral form to improve the quality of referral from primary care and to support earlier diagnosis. Until this is operational, urgent suspected cancer referrals should currently be made using the former cancer network referral forms. These can be located on the LCA website using the following link: [www.londoncanceralliance.nhs.uk/information-for-healthcare-professionals/forms-and-guidelines/lca-forms,-protocols-and-guidance/](http://www.londoncanceralliance.nhs.uk/information-for-healthcare-professionals/forms-and-guidelines/lca-forms,-protocols-and-guidance/)

Copies of the network forms can also be found in Appendix 1.

Please ensure that the fax reaches the hospital within 24 hours of the decision to refer.

**2.1.1 Guidelines for urgent referral**

All women should have a pelvic examination and the clinical findings described on the referral form, as well as any diagnostic tests already undertaken. These may include serum CA-125, haemoglobin and transvaginal ultrasound reports. This will help to ensure that the patient is booked into the most appropriate clinic and to determine whether any pre-clinic tests are required.

Women with the following symptoms should be referred:

- lesions suspicious of cancer on the cervix or vagina on speculum examination
- lesions suspicious of cancer on the vulva on clinical examination
- palpable pelvic mass, not obviously fibroids
- suspicious pelvic mass on pelvic ultrasound
- post-menopausal bleeding in a woman not on HRT
- post-menopausal bleeding in a woman on tamoxifen
- more than one or a single heavy episode of post-menopausal bleeding in a woman on HRT
- persistent inter-menstrual or post-coital bleeding and negative pelvic examination.

In women with persistent abdominal pain, bloating and bowel or urinary symptoms, ovarian cancer should be considered and a pelvic examination, CA-125 and urgent transvaginal ultrasound performed. If any of these are abnormal or if symptoms persist, the patient should be referred for a gynaecological opinion. (London Cancer Programme (2013), *Best Practice Early Detection Pathways: Ovarian cancer.*)


**2.1.2 Screening patients being referred for treatment**

Patients with screen-detected malignancy should be referred to the unit gynaecology oncology team.
2.1.3 Emergency referrals

Emergency presentation of gynaecological cancer is strongly associated with poorer survival. In the UK, 29% of patients with ovarian cancer and 12% of patients with cervical cancer present as emergencies.

Emergency referrals from other specialties within each cancer unit should be referred to the unit gynaecology oncology team, who will assess the patient before re-referring as appropriate. If required, the patient will be presented and discussed at the centre’s specialist multidisciplinary team (MDT) meeting.

Patients with metastatic carcinoma of unknown origin should also be referred on for discussion by the carcinoma of unknown primary MDT.

2.2 Referrals to the cancer centre

All new patients with a diagnosis of ovarian, endometrial, cervical, vaginal or vulval cancer are referred to the cancer centre for discussion at diagnosis prior to commencing definitive treatment. Each patient will be discussed in the specialist MDT, including their original imaging and histology/cytology. Patients are referred to named clinicians for ongoing care, their key worker is transferred and the MDT coordinators at each Trust ensure that patients are added to the specialist MDT when referred to the centre.

2.3 Children, teenagers and young adults

Children below the age of 16 years with a diagnosis of cancer or suspected cancer must be referred to the paediatric oncology team at the principal treatment centre (PTC) and must not be managed exclusively by adult site-specific teams.

- The joint PTC for children aged below 16 years for South Thames is The Royal Marsden (Sutton)/St George’s Hospital.
- The PTC for North Thames (including North West London) is Great Ormond Street Hospital/University College London Hospitals.
- All patients <1 year from both North and South Thames should be referred to Great Ormond Street Hospital.

For certain tumour types that are uncommon in children, the paediatric oncology team should liaise with the appropriate site-specific MDT for advice about management and to agree surgical interventions, but overall responsibility for managing the patient remains with the paediatric oncology team.

Please see Appendix 4 for contact information for the children’s PTCs.

Teenagers aged 16–18 should be managed at a PTC for teenage and young adult (TYA) cancers. Young adults aged 19–24 should be given the choice of being managed at a PTC or TYA designated hospital.

- The PTC for TYA for South Thames is The Royal Marsden (Surrey).
- The PTC for TYA for North Thames (including North West London) is University College London Hospitals.

All patients within this age range, regardless of place of care, should be referred to the TYA MDT at the relevant PTC.

Please see Appendix 5 for information about how to make a referral and contact information for the PTC and TYA designated centres in the LCA.
3 Data Requirements

Gynaecology oncology services within the LCA are required to submit data to the following nationally mandated datasets for all patients diagnosed with gynaecological cancer.

3.1 The Cancer Outcomes and Services Dataset (COSD)

The core dataset for all tumour types including gynaecological cancer is mandated from January 2013, and the site-specific dataset is mandated from July 2013. Details of the dataset can be found on the National Cancer Intelligence Network website: www.ncin.org.uk/collecting_and_using_data/data_collection/cosd.aspx

The local cancer registry will be collating this dataset using Trust data feeds which should include all these items. The feeds are:

- Trust PAS
- Trust pathology
- Trust radiology
- Trust multidisciplinary team (MDT) feed.

These data should be submitted within 25 working days of the end of the month in which the activity took place.

3.2 Systemic Anti-Cancer Therapy dataset (SACT)

Provider Trusts that provide chemotherapy to patients are required to submit data to the SACT dataset. Details of the audit and the dataset requirements are available on the dataset homepage: www.chemodataset.nhs.uk/home.aspx

3.3 Radiotherapy Dataset (RTDS)

Provider Trusts that provide radiotherapy to patients are required to submit data to the RTDS dataset. Details of the audit and the dataset requirements are available on the dataset homepage: www.canceruk.net/rtservices/rtds/

3.4 Cancer Waiting Times dataset

Trusts are required to submit data to the Cancer Waiting Times dataset, which includes details of all patients who are referred as a 2 week wait (2ww) referral, and all patients who are treated for cancer. Trusts are required to submit these data within 25 working days of the month of either when the patient was first seen for the 2ww target, or when the patient was treated.

The cancer waiting times dataset can be found at: www.datadictionary.nhs.uk/data_dictionary/messages/clinical_data_sets/data_sets/national_cancer_waiting_times_monitoring_data_set_fr.asp
3.5 Local data requirements

The LCA Gynaecology Oncology Pathway Group is working on developing a suite of metrics to inform the group and services within the LCA on areas of priority and potential service improvement. The LCA is currently collating information which is available through sources of data currently available, though the Gynaecology Oncology Pathway Group or the LCA Clinical Board may require Trusts to submit additional MDT data to the LCA if additional priority areas are identified.
4 Ovarian Cancer

4.1 Background

In 2010, ovarian cancer (including fallopian tube and primary peritoneal of gynaecological origin) was diagnosed in over 7,000 women and caused more than 4,200 deaths in the UK. The rate equates to around 21 cases for every 100,000 women. It is currently the second most common gynaecological cancer and the fifth most common malignancy in women. Over 80% of ovarian cancer cases are diagnosed in women over the age of 50. The highest age-specific incidence rates are seen for women aged 80–84 years at diagnosis (69 per 100,000). The majority of women (60%) present with advanced disease with little prospect of cure. The 5-year survival rate is increasing over time and between 2005 and 2009 was 43%. The 5-year survival rate falls with higher stages of disease at diagnosis: stage I 90%; stage III 22%; stage IV 6%.

The current standard of care for newly diagnosed ovarian cancer consists of a combination of cytoreductive surgery and platinum-based chemotherapy. There remains a significant risk of recurrence and resistance to therapy. Systemic therapy options for relapsed ovarian cancer are guided by the platinum-free interval. Management of fallopian tube and primary peritoneal tumours is currently the same as for ovarian cancer.

Advances in our understanding of the biology of ovarian cancer have led to clinical trials of targeted agents of which anti-angiogenic agents and PARP inhibitors are currently the most developed. Epithelial ovarian cancer is recognised as a heterogeneous disease consisting of several histological sub-types with distinct clinical behaviour and molecular pathways (high-grade serous – p53, BRCA, homologous recombination deficiency; low-grade serous – BRAF, KRAS, NRAS, HER2; clear cell – PIK3CA, PTEN; endometrioid – PIK3CA, PTEN; and mucinous – KRAS, HER2). Increased recruitment of patients into clinical trials directed at specific sub-types of ovarian cancer is needed.

Table 4.1: Ovarian cancer statistics

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Females</th>
<th>Country</th>
<th>Year³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new cases per year</td>
<td>7,011</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Incidence rate per 100,000 population¹</td>
<td>17.1</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Number of deaths per year</td>
<td>4,295</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality rate per 100,000 population¹</td>
<td>9.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-year survival rate²</td>
<td>72.3%</td>
<td>England</td>
<td>2005–09</td>
</tr>
<tr>
<td>5-year survival rate²</td>
<td>42.9%</td>
<td>England &amp; Wales</td>
<td>2007 (predicted)</td>
</tr>
<tr>
<td>10-year survival rate²</td>
<td>35.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. European age-standardised
2. Adults diagnosed
3. Latest statistics available

Source: Cancer Research UK: [www.cancerresearchuk.org/cancer-info/cancerstats/keyfacts/ovarian-cancer/]
4.1.1 Screening

Screening is not currently routinely recommended. Options under investigation include transvaginal ultrasound and serum CA-125.

4.1.2 Genetics

If there is a personal or family history of cancer (e.g. suspected Lynch syndrome, BRCA), then discuss with the cancer genetics services.

Patients who have a personal history of breast cancer, a relative with ovarian or male breast cancer or relatives with breast cancer and a Manchester score of ≥15 must be offered a referral to the cancer genetics service for BRCA testing.

Approximately 10–15% of all epithelial ovarian cancer is associated with germline BRCA1 or BRCA2 mutations. It is reported that over 40% of all women identified as having BRCA1/2 mutations do not have a significant family cancer history. Women with high-grade serous and endometrioid histological sub-types are associated with higher rates of BRCA1 or BRCA2 germline mutations.

Ovarian cancer patients with high-grade serous or endometrioid histological sub-types should be considered for BRCA testing regardless of family history.

4.2 Presentation and referral

“In women presenting with one or more symptoms of abdominal distension or bloating with or without abdominal pain, feeling full quickly, difficulty eating, or urinary symptoms, of less than 12 months’ duration and occurring more than 12 times per month, a diagnosis of ovarian cancer should be considered.”


Earlier diagnosis of ovarian cancer could improve survival rates. In England at present, only 26% of cases are diagnosed through the 2 week wait (2ww) urgent referral pathway with 29% by emergency presentation. The significantly lower survival rates for ovarian cancer observed in England are generally attributed to later diagnosis, with as many as 70% of ovarian cancers already at an advanced stage (FIGO stage III or IV) at the time of diagnosis, making them more difficult to treat.

Retrospective studies show that women with ovarian cancer present with non-specific symptoms including abdominal pain and bloating, changes in bowel habit, urinary and/or pelvic symptoms. Cachexia is uncommon and women with advanced disease often look surprisingly well. Most women with ovarian cancer are diagnosed when they already have advanced disease. However, studies have consistently reported that ovarian cancer is not an asymptomatic condition, with only 5–10% of women being truly asymptomatic at diagnosis. Abdominal distension/bloating is the most important symptom together with abdominal/pelvic pain, feeling full quickly or having difficulty eating. Other symptoms found to be associated with ovarian cancer were post-menopausal bleeding, rectal bleeding, urinary symptoms and weight loss.

Measurement of CA-125 in blood serum is the test most widely used to detect ovarian cancer. Menstruation and benign conditions such as endometriosis, pelvic inflammatory disease and liver disease can also be associated with elevated concentrations of CA-125. It may also be elevated in women with ascites, pleural or pericardial effusions and in women who have had a recent laparotomy.
Approximately 80% of patients with advanced ovarian cancer have elevated concentrations of CA-125 in the blood serum. However, no more than 50% of patients with clinically detectable stage I disease have elevated CA-125 levels.

4.2.1 Assessment in primary care

“CA-125 blood serum level (normal level less than 35IU/ml) should be measured and urgent pelvic ultrasound carried out in women with persistent abdominal distension or feeling full and/or loss of appetite or pelvic or abdominal pain or increased urinary urgency and/or frequency.”

London Cancer Programme (2013), Best Practice Early Detection Pathways: Ovarian cancer

If either of these results is abnormal, the patient is referred via the 2ww system.

If symptoms persist or worsen despite a normal CA-125 blood serum level and a negative ultrasound scan, refer to secondary care.

4.3 Initial diagnostic investigations

- Clinical assessment.
- Tumour markers:
  - CA-125, CA 19-9, CEA, CA-153
  - alpha fetoprotein (AFP) and beta human chorionic gonadotropin (hCG) in women less than 40 years.
- Ultrasound scan:
  - a transvaginal ultrasound scan should be undertaken by an accredited radiographer, radiologist or gynaecologist
  - adnexal masses can be evaluated using the International Ovarian Tumour Analysis (IOTA) simple rules which detail five ultrasonic features to predict malignant or benign features.
- If the pelvic mass is clinically or sonographically indeterminate, then further imaging is required to further characterise the mass:
  - dynamic contrast enhanced magnetic resonance imaging (MRI) scan
  - level III (Expert) ultrasound.

The decision whether to treat at a cancer unit or refer to the cancer centre is based on the ultrasound findings and/or calculation of the risk of malignancy index (RMI) for all patients with an ovarian cyst or mass.
Table 4.2: Calculating the risk of malignancy index

<table>
<thead>
<tr>
<th>Feature</th>
<th>RMI 1 score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasound features:</td>
<td></td>
</tr>
<tr>
<td>• multilocular cyst</td>
<td>0 = none</td>
</tr>
<tr>
<td>• solid areas</td>
<td>1 = one abnormality</td>
</tr>
<tr>
<td>• bilateral lesions</td>
<td>3 = two or more abnormalities</td>
</tr>
<tr>
<td>• ascites</td>
<td></td>
</tr>
<tr>
<td>• intra-abdominal metastases</td>
<td></td>
</tr>
<tr>
<td>Menopause score</td>
<td>1 = pre-menopausal</td>
</tr>
<tr>
<td>CA-125 level</td>
<td>3 = post-menopausal</td>
</tr>
</tbody>
</table>

RMI score = ultrasound score x menopausal score x CA-125 level in U/ml

All patients with a suspected diagnosis of ovarian cancer will be registered with the centre and have their management discussed at the centre multidisciplinary team meeting.

- Patients with RMI of 250 or greater are considered at high risk of ovarian cancer and should be referred to the centre for further management.
- If the imaging is suggestive of ovarian cancer but the RMI score is less than 250, then the patient should also be discussed at the centre MDT meeting.
- If investigations indicate a probable benign lesion, then further management (observation or surgery) should be undertaken in the cancer unit.

4.3.1 Emergency presentation

There are occasions when patients may have their primary laparotomy performed by a general surgeon at a cancer unit. This may follow an emergency admission or may be the result of a procedure performed for an alternative presumptive diagnosis. In this situation, the early involvement of the local lead oncology gynaecologist, clinical nurse specialist and the specialist centre MDT meeting is essential.

4.4 Staging

4.4.1 FIGO system

The FIGO (Fédération International de Gynécologie et d’Obstétrique) system is used for staging disease. The revised FIGO staging system was introduced in January 2014. As many clinical trials and registry data will require the former staging system, both the 1998 and 2013 staging should be documented. (There are two staging systems: FIGO and TNM. These guidelines use FIGO but have quoted the equivalent TNM stage in brackets.)
FIGO staging 2013 (TNM)

Stage I: Tumour confined to ovaries or fallopian tube(s) (T1, N0, M0)

IA: Tumour limited to one ovary (capsule intact) or fallopian tube; no tumour on ovarian or fallopian tube surface; no malignant cells in the ascites or peritoneal washings (T1a, N0, M0)

IB: Tumour limited to both ovaries (capsules intact) or fallopian tubes; no tumour on ovarian or fallopian tube surface; no malignant cells in the ascites or peritoneal washings (T1b, N0, M0)

IC: Tumour limited to one or both ovaries or fallopian tubes, with any of the following:

   IC1: Surgical spill
       (T1c1, N0, M0)

   IC2: Capsule ruptured before surgery or tumour on ovarian or fallopian tube surface
       (T1c2, N0, M0)

   IC3: Malignant cells in the ascites or peritoneal washings
       (T1c3, N0, M0)

Stage II: Tumour involves one or both ovaries or fallopian tubes with pelvic extension (below pelvic brim) or primary peritoneal cancer (T2, N0, M0)

IIA: Extension and/or implants on uterus and/or fallopian tubes and/or ovaries
    (T2a, N0, M0)

IIB: Extension to other pelvic intra-peritoneal tissues
    (T2b, N0, M0)

Stage III: Tumour involves one or both ovaries or fallopian tubes, or primary peritoneal cancer, with cytologically or histologically confirmed spread to the peritoneum outside the pelvis and/or metastasis to the retroperitoneal lymph nodes (T1/T2, N1, M0)

IIIA1: Positive retroperitoneal lymph nodes only (cytologically or histologically proven):

   IIIA1(i): Metastasis up to 10mm in greatest dimension

   IIIA1(ii): Metastasis more than 10mm in greatest dimension

IIIA2: Microscopic extra-pelvic (above the pelvic brim) peritoneal involvement with or without positive retroperitoneal lymph nodes
    (T3a2-N0/N1-M0)

IIIB: Macroscopic peritoneal metastasis beyond the pelvis up to 2cm in greatest dimension, with or without metastasis to the retroperitoneal lymph nodes
    (T3b-N0/N1-M0)
IIIC: Macroscopic peritoneal metastasis beyond the pelvis more than 2cm in greatest dimension, with or without metastasis to the retroperitoneal lymph nodes (includes extension of tumour to capsule of liver and spleen without parenchymal involvement of either organ) 
(T3c-N0/N1-M0)

**Stage IV: Distant metastasis excluding peritoneal metastases**

IVA: Pleural effusion with positive cytology

IVB: Parenchymal metastases and metastases to extra-abdominal organs (including inguinal lymph nodes and lymph nodes outside of the abdominal cavity)
(AnyT, anyN, M1)

**FIGO staging 1998**

**Stage I: Tumour limited to the ovaries**

Ia: Tumour limited to one ovary; capsule intact, no tumour on the ovarian surface, no ascites containing malignant cells

Ib: Tumour limited to both ovaries; capsule intact, no tumour on the ovarian surface, no ascites containing malignant cells

Ic: Tumour limited to one or both ovaries with any of the following: capsular rupture, tumour on the ovarian surface, malignant cells in ascites or peritoneal washings

**Stage II: Extension of tumour to true pelvis**

IIa: Tumour involving one or both ovaries with extension and/or metastasis to uterus and/or tubes

IIb: Tumour involving one or both ovaries with extension and/or metastasis to other pelvic tissues

IIc, IIa or IIb: with any of the following: capsular rupture, tumour on the ovarian surface, malignant cells in ascites or peritoneal washings

**Stage III: Peritoneal (including superficial liver capsule metastases), omental or retroperitoneal/inguinal node involvement**

IIIa: Tumour grossly limited to true pelvis with negative nodes but with histologically confirmed microscopic involvement of omentum or peritoneal surfaces

IIIb: Histologically confirmed peritoneal or omental implants 2cm or less in greatest dimension with negative nodes

IIIc: Implants >2cm in greatest dimension and/or positive retroperitoneal or inguinal nodes

**Stage IV: Distant metastases or parenchymal liver metastases. Pleural effusion only if cytology positive**

4.4.2 **Staging investigations**

- Tumour markers (if not already undertaken):
  - CA-125, CA 19-9, CEA, CA-153
  - in addition, for patients less than 40 years, AFP, beta hCG, lactate dehydrogenase (LDH)
- Computerised tomography (CT) scan of thorax, abdomen and pelvis
• Pleural aspirate for cytology if indicated (staging)
• Colonoscopy +/- biopsy if suggestion of intrinsic bowel pathology
• Tissue biopsy undertaken by interventional radiology (CT or ultrasound scan guided) or laparoscopy if primary surgery is not planned.

If offering cytotoxic chemotherapy to women with suspected advanced ovarian cancer, first obtain a confirmed tissue diagnosis by histology (or by cytology if histology is not appropriate) in all but exceptional cases.

4.5 Management

Surgery in all cases where ovarian cancer is suspected, irrespective of stage, should take place in the centre by a designated gynaecological oncologist. Initial treatment may be surgical or medical, based on individual circumstances following discussion at the MDT meeting.

If performing surgery for women with ovarian cancer, whether before chemotherapy or after neo-adjuvant chemotherapy, the objective should be complete resection of all macroscopic disease.

4.5.1 Surgery

Staging laparotomy

Diagnosis is made at staging laparotomy with adequate exposure through a midline incision or with minimal access surgery.

Surgery should include the following:
• peritoneal washings or collection of ascitic fluid for cytology
• palpation of pelvic and abdominal contents including liver, diaphragm, paracolic gutters, intestine and para-aortic and pelvic nodes
• inspection (and biopsy where appropriate) of peritoneal surfaces, including atypical and ‘normal’ peritoneum; biopsy any suspicious lesions or adhesions
• infracolic omentectomy
• biopsy of palpable lymph nodes
• extirpative surgery is of prime importance in epithelial ovarian cancers. Removal of both adnexae (bilateral salpingo-oophorectomy) with total abdominal hysterectomy and omentectomy is indicated in stage I epithelial ovarian cancer, and, wherever possible, in stages II to IV
• appendicectomy for mucinous tumours.

Primary cytoreductive surgery

Staging surgery is undertaken as described above.

Primary surgery (‘debulking’) improves chemotherapy response rates as well as increasing survival.

The aim of surgery is to remove all visible disease. A careful recording of sites and size of residual disease at the end of surgery is imperative.

Patients for surgery should not routinely undergo bowel preparation unless the history, clinical findings or imaging reveal advanced disease where bowel involvement is present. This may be required as an
emergency for patients presenting with impending bowel obstruction. If bowel preparation is given based on these findings, then the patient should see a trained stoma nurse prior to surgery for counselling and stoma site marking. In cases of small bowel or prepared large bowel involvement, a direct anastomosis without an ileostomy or colostomy may be performed.

**Ultra-radical (extended) surgery**

Ovarian cancer spreads throughout the peritoneal cavity and is frequently very advanced at presentation. The aim of ultra-radical surgery for advanced ovarian cancer is to remove all visible disease, with a view to improving survival compared with standard, less radical surgery.

In addition to techniques used in standard surgery, ultra-radical surgery incorporates at least one of the following:

- stripping of the diaphragm
- partial gastrectomy/cholecystectomy
- liver resection
- splenectomy
- multiple bowel resections (excluding localised colonic resection)
- extensive peritoneal stripping.

This surgery should be undertaken only if it is anticipated that complete debulking of macroscopic disease can be achieved.

**As recommended by NICE IPG 470**

Clinicians wishing to undertake ultra-radical surgery for advanced ovarian cancer should take the following actions:

- Selection of patients should be done by a specialist gynaecological cancer multidisciplinary team.
- Inform patients clearly about alternative treatment options, and about their benefits and risks compared with ultra-radical surgery for advanced ovarian cancer.
- Ultra-radical surgery for advanced ovarian cancer should be done by collaboration between surgeons with appropriate expertise (such as specialists in gastrointestinal and hepatobiliary surgery) and/or by specialists in gynaecological cancer surgery with specific training in such extensive surgery.
- The procedure should only be done in specialised units with a regular practice in this type of surgery.
- Inform the clinical governance leads in their NHS Trusts.
- Clinicians should ensure that details of patient selection and the precise extent of surgery are fully documented. Reported outcomes should include all complications, survival and quality of life.
- Clinicians should submit data on all patients having this procedure to the national register when it becomes available and review clinical outcomes locally.

**Lymphadenectomy**

The role of lymphadenectomy in ovarian cancer is unclear. Whereas it does not in itself influence survival, there may be groups of patients who can be spared chemotherapy if they are node negative after optimal surgical staging. Furthermore, knowledge of nodal status may influence which type of chemotherapy should be given.
Pelvic and para-aortic lymphadenectomy are part of complete staging for serous, endometrioid and clear cell histological sub-types. For mucinous tumours, the incidence of lymph node metastasis in tumours otherwise confined to the ovary is extremely small.

Retroperitoneal lymph node assessment should be undertaken as part of optimal surgical staging in women who appear to have stage I ovarian cancer.

If nodes are enlarged, they should be removed as part of the aim of removing all macroscopic disease.

**Use of frozen section**

At operation, malignant disease may be obvious by the appearance and pattern of spread of disease. However, the diagnosis may not be evident where pre-operative investigations have revealed a complex ovarian cyst with no macroscopic metastatic disease, or where a suspicious-looking lesion is identified and the nature of this may alter the type of surgery performed (e.g. fertility-sparing surgery). The use of intra-operative frozen section analysis may be used to identify malignant disease and reduce the need for a second staging procedure. This technique has its limitations, however, and may not reliably differentiate between borderline and benign disease, and is more difficult to interpret with mucinous tumours.

**Fertility-preserving surgery**

Some young patients with epithelial ovarian cancer wish to retain their fertility. Surgery will involve full staging to assess the extent of disease but without removing the uterus and the contralateral ovary if it looks macroscopically normal. In these circumstances the recurrence rate for patients is higher than with conventional radical surgery and this risk needs to be carefully communicated to the patient.

Fertility-sparing surgery is much more suitable for patients with germ cell tumours or borderline disease.

Criteria for considering conservative surgery in epithelial ovarian cancer:

- apparent stage IA following optimal surgical staging procedures
- favourable histopathologic sub-type (will not be known until pathology is reviewed)
- negative peritoneal washings
- no invasion through the tumour capsule
- no lymph node involvement.

**Malignant germ cell tumour suspected**

Fertility-sparing surgery is possible in the majority of patients with a suspected germ cell tumour. The involved ovary should be sent for frozen section analysis, and standard surgical staging should be performed.

**Delayed primary debulking surgery**

Some women may present with poor performance status at initial presentation or have evidence of stage IV disease or extensive upper abdominal disease. These women may receive neo-adjuvant chemotherapy and at the end of 3 to 6 cycles of treatment may be shown to have evidence of a response to treatment (reduction in CA-125 and radiological response). In these women, delayed primary surgery may be considered.
The aim of this surgery must be to remove all macroscopic disease. The patients with the best survival rate are those who have no macroscopic disease after primary surgery. However, in advanced disease there is evidence that neo-adjuvant chemotherapy can provide a tumour response that allows for debulking surgery with less morbidity.

The exact cut-off point where there is more benefit from primary surgery than from neo-adjuvant chemotherapy has not been established. Each patient needs to be discussed individually in the specialist MDT meeting.

**Interval debulking surgery**

This surgery is defined as a surgical procedure performed in women whose tumour mass has decreased following three to four courses of chemotherapy and who have previously undergone surgery that was unsuccessful at optimally cytoreducing the disease. These women should show evidence of a response to chemotherapy as determined by CA-125 and imaging.

Interval debulking surgery should be performed only where it was not possible to optimally debulk the disease at initial surgery but where, following a good response to chemotherapy, complete debulking of disease is deemed possible by the specialist multidisciplinary team.

**Second look surgery**

This is a surgical re-evaluation of asymptomatic ovarian cancer patients who have no clinical evidence of tumour after primary cytoreductive surgery and adjuvant chemotherapy. Disease may be identified in more than 50% of women undergoing this surgery. However, the use of second look surgery is not advocated because earlier initiation of chemotherapy when recurrent disease was found has not been demonstrated to show a survival benefit.

### 4.5.2 Histopathology

All tissue specimens removed at laparotomy are submitted for histopathological examination.

Specimens are handled according to the standard operating procedures of the Trust’s department of pathology, which cover fixation, dissection, block taking and reporting, and conform to national guidelines and minimum datasets (where available).

Histopathology reports on ovarian cancer cases will include the following:

- summary of clinical history
- macroscopic description of all specimens including dimensions of ovarian tumours, status of capsule, cyst contents
- microscopic description (synoptic report available) including:
  - Histological tumour type (WHO classification)
    - I. Grade
    - II. Status of capsule
    - III. FIGO stage.

All cases are reviewed by consultant pathologists with a special interest in gynaecological pathology, and presented at the combined gynaecological oncology clinic meeting prior to decision making about post-surgical management.
4.5.3 Chemotherapy

General pre-chemotherapy investigations

- Record residual disease
- Post-operative baseline CT chest, abdomen, pelvis
- Baseline tumour markers CA-125 (others, e.g. CA 19-9, if elevated at diagnosis)
- Full blood count (FBC), urea and electrolytes (U&E), liver function tests (LFTs), albumin
- Calculate glomerular filtration rate (GFR) for patients receiving platinum-based chemotherapy: either EDTA or calculated GFR (Cockcroft and Gault formula)
- Calculate body surface area (BSA)
- Document performance status.

All patients require baseline imaging (CT chest/abdomen/pelvis) within 4 weeks of commencing systemic therapy.

Tumour markers (CA-125) should be performed prior to commencing cycle 1 (baseline) and at every cycle.

Repeat imaging is performed following 3 and 6 cycles. For patients receiving adjuvant chemotherapy, imaging can be repeated after 6 cycles (i.e. omit after 3 cycles) if there is no measurable disease on the baseline scan.

Performance status (PS) must be documented at the start of each cycle of systemic treatment. Patients receiving chemotherapy should have a PS of 0–2; all patients with a PS ≥3 receiving chemotherapy should have reasons for this decision documented.

ECOG (Eastern Cooperative Oncology Group) performance status scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Able to carry out all normal activity without restriction</td>
</tr>
<tr>
<td>1</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out light work</td>
</tr>
<tr>
<td>2</td>
<td>Ambulatory and capable of all self-care, but unable to carry out work; up and about more than 50% of waking hours</td>
</tr>
<tr>
<td>3</td>
<td>Capable only of limited self-care; confined to bed or chair more than 50% of waking hours</td>
</tr>
<tr>
<td>4</td>
<td>Completely disabled; cannot carry out any self-care; totally confined to bed or chair</td>
</tr>
</tbody>
</table>

Toxicities must be documented at each visit with assessment of severity. The CTC (Common Toxicity Criteria), version 4.0 is recommended. The CTC grading can be found at: [http://evs.nci.nih.gov/ftp1/CTCAE](http://evs.nci.nih.gov/ftp1/CTCAE)
Toxicity grading

0 = No adverse event or within normal limits
1 = Mild adverse event
2 = Moderate adverse event
3 = Severe and undesirable adverse event
4 = Life-threatening or disabling adverse event
5 = Death related to adverse event

The rationale, aims and possible toxicities of chemotherapy are to be discussed with all patients. Information leaflets on chemotherapy should be provided and patients need to have the opportunity to discuss any questions prior to written informed consent with their oncology team/keyworker.

Each cancer centre has local guidelines for:

- dose modifications
- management of hypersensitivity
- management of common toxicities.

First-line chemotherapy: early stage (stage I)

Treatment for early-stage ovarian cancer is potentially curative.

Patients with completely staged IA or IB low-grade (well-differentiated) cancers have a 5-year survival rate of more than 90% and do not require adjuvant chemotherapy. The rationale for no adjuvant chemotherapy should be discussed with all patients.

Patients who present with one or more of the following are considered to have a worse prognosis and should be offered adjuvant chemotherapy:

- stage IC or above
- histology: high grade of any sub-type, clear cell or poorly differentiated carcinoma
- incomplete surgical staging.

Combination chemotherapy is the standard treatment in international trials and is the treatment of choice.

Options

- Carboplatin (AUC5) in combination with paclitaxel (175mg/m²) every 21 days (3-weekly) for 6 cycles
- Single agent carboplatin (AUC5–6) every 21 days for 6 cycles
- Consider clinical trials.

Intra-peritoneal chemotherapy

Intra-peritoneal chemotherapy is not to be offered to women with ovarian cancer except as part of a clinical trial.
Advanced stage (stages II–IV)

Neo-adjuvant and adjuvant chemotherapy

- Carboplatin (AUC5) in combination with paclitaxel (175mg/m²) every 21 days for 6 cycles
- Single agent carboplatin (AUC5–6) every 21 days for 6 cycles may be appropriate for selected cases (e.g. co-morbidities)
- Bevacizumab is available through the national Cancer Drugs Fund (CDF) for women with either FIGO stage III disease with >1cm residual disease or FIGO stage IV disease. Bevacizumab is started with carboplatin and paclitaxel combination chemotherapy at a dose of 7.5mg/kg every 3 weeks for a maximum of 18 cycles
- Consider clinical trials.

Recurrent or persistent disease

Approximately 80% of patients diagnosed with ovarian epithelial cancer eventually relapse after first-line platinum/taxane-based combination chemotherapy and may benefit from further treatment.

Systemic treatment options for patients with recurrent disease depend on the platinum-free interval:

- **Platinum-sensitive**: disease recurs/progresses more than 6 months after the last dose of platinum-based chemotherapy
- **Platinum-resistant**: disease recurs/progresses less than 6 months after the last dose of platinum-based chemotherapy
- **Platinum-refractory**: disease recurs/progresses during platinum-based chemotherapy.

Relapse/progression 6–12 months following the last dose of platinum-based chemotherapy is termed ‘partially platinum-sensitive’.

The timing of commencing systemic therapy for relapsed/persistent disease depends on clinical symptoms, rate, distribution and degree of progression. It is recommended that patients with a rising CA-125 alone (non-measurable/low-volume disease) should be closely monitored (clinical review, imaging) and not routinely commence standard systemic therapy unless in the context of a clinical trial.

**Platinum-sensitive (>6 months since last platinum)**

Platinum-based combination chemotherapy options:

- Carboplatin (AUC5) and paclitaxel (175mg/m²) every 21 days for 6 cycles
- Carboplatin (AUC5) and liposomal doxorubicin (30mg/m²) every 28 days for 6 cycles
- Carboplatin (AUC4) day 1 and gemcitabine (1,000mg/m²) days 1 and 8 every 21 days for 6 cycles
- Bevacizumab given with carboplatin and gemcitabine combination chemotherapy (doses as above) is available through the national CDF for **first** platinum-sensitive relapse (i.e. second-line treatment). It is commenced with chemotherapy, administered at 15mg/kg every 21 days and continued till disease progression
- Single agent carboplatin (AUC5–6) every 21 days
- Consider clinical trial (systemic therapy or surgical).

Consider further cycles of chemotherapy if continued response and tolerated.
Platinum-resistant (<6 months since last platinum) and platinum-refractory (during platinum chemotherapy)

- Consider clinical trial
- Paclitaxel weekly (80mg/m²) – 6 weeks on, 1 or 2 weeks off or 3 weeks on, 1 week off for 6 cycles
- Liposomal doxorubicin (40mg/m²) for 6 cycles
- Carboplatin (AUC4) day 1 and gemcitabine (1,000mg/m²) days 1 and 8 every 21 days for 6 cycles
- Topotecan (1.25mg/m²) days 1–5 every 21 days for 6 cycles
- Endocrine therapy – tamoxifen 40mg/day, aromatase inhibitor (e.g. letrozole 2.5mg/day or anastrozole 1mg/day)
- Referral to specialist palliative care.

Other drugs that have been used in this setting are chlorambucil, cyclophosphamide, gemcitabine and etoposide.

Consider further cycles of chemotherapy if continued response/benefit and tolerated.

4.5.4 Secondary cytoreductive surgery

Secondary cytoreductive surgery should be considered for patients with a platinum-free interval of more than 6 months. Factors include number of sites of recurrent disease, response to prior chemotherapy and volume of residual disease following primary surgery.

CT-positron emission tomography (PET) should be considered to determine if any other sites of disease can be identified prior to surgery or radical radiotherapy.

Consider clinical trial.

4.5.5 Radiotherapy

Radiotherapy may be indicated for radical treatment of single sites of disease and for palliation of symptoms from pelvic disease or metastases.

4.6 Follow-up

After completion of chemotherapy or surgery, patients should have an end of treatment CT chest/abdomen/pelvis and CA-125 measured (and other markers if originally elevated).

The follow-up schedule depends on the risk of recurrence, clinical symptoms and whether tumour markers were initially elevated.

Patients should be encouraged to contact the team if they develop new symptoms in order to have an earlier appointment. Use of an End of Treatment Summary will help patients and their GPs identify when to contact the team.

For patients who have undergone fertility-sparing surgery, consider MRI abdomen/pelvis or transvaginal ultrasound instead of CT due to the potential radiation risk or better evaluation of selected cases.

Trial patients will have follow-up as per trial protocol.
Typical follow-up schedule

**Low-risk (stage I) disease**
Years 1–2: 3-monthly clinical review with CA-125
Years 3–5: 6-monthly clinical review with CA-125
Consider discharge at 5 years

**High-risk (stage II+) or recurrent disease**
Years 1–2: 3-monthly clinical review and CA-125.
Year 3–5: 4–6-monthly review and CA-125
Year 5+: annual review.
Discharge at 10 years
CT scan if rising CA-125, if clinically indicated or 6–12 monthly if non-secretor of tumour markers.

4.7 Carcinosarcomas

The management of carcinosarcoma of ovarian origin is the same as for epithelial ovarian cancer.

4.8 Non-epithelial ovarian tumours

4.8.1 **Sex cord-stromal: granulosa cell tumours, Sertoli-Leydig cell tumours**
Radical surgery at the cancer centre as per epithelial ovarian cancer protocol.
The value of node dissection if no abnormal nodes on imaging or at surgery is uncertain.
There is no role for adjuvant chemotherapy in completely resected disease.
Relapsed disease:
- Consider further surgery for relapsed disease
- Platinum-based chemotherapy for selected recurrent unresectable cases (e.g. BEP, carboplatin in combination with paclitaxel)
- Consider anti-oestrogen therapy (e.g. aromatase inhibitors, tamoxifen, GnRH agonist (Goserelin)).

4.8.2 **Follow-up**
Consider indefinite follow-up with annual clinical examination and serum inhibin levels and other relevant markers (e.g. testosterone).

4.9 **Germ cell tumours**
Patients should be managed in a centre with experience in managing germ cell tumours.
TYA input is required for teenagers and young adults when diagnosed with germ cell tumours.
4.10 Borderline ovarian tumours

Borderline ovarian tumours account for approximately 15% of epithelial ovarian tumours. The mean age of presentation is typically 10 years younger than invasive ovarian cancer and therefore fertility preservation is an important consideration. The main sub-types are serous and mucinous borderline tumours. Diagnosis is made on the surgical specimen and there is no reliable method with either imaging or tumour markers for differentiating benign from malignant tumours.

4.10.1 Staging

As per ovarian cancer FIGO staging.

A review of the original histology should be undertaken by the centre histopathologist.

4.10.2 Management

The management of borderline ovarian disease very much depends on the age and fertility status of the patient. All patients with this disease should undergo staging surgery consisting of:

- thorough exploration of the entire abdominal cavity
- peritoneal washings
- infracolic omentectomy
- removal of all macroscopic suspicious peritoneal lesions
- multiple peritoneal biopsies
- appendicectomy (for mucinous tumours).

Total abdominal hysterectomy/bilateral salpingo-oophorectomy is recommended for women who have completed their family.

For women with apparent stage I disease and a desire to preserve fertility, the uterus and part of one ovary may be preserved. The patient should be counselled pre-operatively that there is a higher chance of recurrence after conservative surgery, particularly if a cystectomy is performed.

If there is bilateral ovarian disease or a history of previous unilateral salpingo-oophorectomy, it is reasonable to perform a cystectomy if this is feasible. However, in the presence of gross bilateral disease this may not be possible.

If the disease involves only one ovary and the other appears normal, then this should be removed. There is no need to perform systematic biopsies from the contralateral normal-looking ovary.

In advanced borderline tumours, complete resection of the disease is necessary.

If there is any doubt about the histological diagnosis, then treatment is individualised; either full staging should be undertaken including appendicectomy (for mucinous tumours of intestinal type) or more intensive follow-up.

If borderline ovarian disease is diagnosed as an unexpected finding for surgery for benign disease, then restaging should be performed if there is no description in the operation note of the abdominal cavity or peritoneal surfaces.

Most borderline tumours are stage I at presentation and have an excellent prognosis.
Patients with invasive implants may be treated as though they have epithelial ovarian cancer.

In the majority of cases, no adjuvant therapy is indicated. The use of cytotoxic chemotherapy in advanced cases is controversial and not routinely recommended. Cases should be reviewed and discussed on an individual basis.

4.10.3 Follow-up

The risk of recurrence is low for most women. The follow-up schedule depends on stage, histology and whether fertility-preserving surgery was undertaken.

Stage I patients should be followed for at least 10 years with transvaginal ultrasound to examine the remaining ovary if they have had fertility-sparing surgery.

Patients with non-invasive peritoneal implants require careful follow-up at the centre.

Following treatment there is no contraindication to pregnancy in stage I patients. Stage III patients should be counselled appropriately if they wish to have a family.

Patients should be counselled to consider removal of the remaining ovary after completion of family and/or menopause.

4.11 Research

All patients should be considered for participation in clinical trials at all stages of the cancer pathway. This includes drug trials, imaging, surgical and radiotherapy studies, tissue collection studies and survivorship studies. Contact individual cancer centre trial coordinators and/or research leads for the up-to-date trial portfolio and eligibility.

References


5 Cancer of the Endometrium

5.1 Background

There were more than 8,200 new cases of uterine cancer diagnosed in the UK in 2010. This makes uterine cancer the fourth most common cancer in women and the most common gynaecological cancer. Between 2008 and 2010 there was an average of just over 1,800 deaths per year from uterine cancer. The incidence rate has increased by 43% since 1993–95, from 13.8 per 100,000 female population to 19.7 in 2007–09. Mortality has also increased by 14% from 3.2 to 3.7 per 100,000. Overall, 1- and 5-year survival rates in the UK have increased since 1993–95 to 91.2% and 78.5%. Despite this, survival remains significantly worse in older women.

Almost two-thirds of uterine cancers occur in women aged 55–75 with a peak in the rates for women in their early 70s. Obesity is a significant risk factor for adenocarcinoma of the endometrium, with the effect more pronounced in post-menopausal women. In England, obesity prevalence has increased from 16% of women in 1993 to 26% in 2011. Cases of endometrial adenocarcinoma in younger women are often associated with polycystic ovary syndrome and obesity. Endometrial hyperplasia is a pre-cancer change in the endometrium, which can progress to adenocarcinoma of the endometrium. Other clinical factors which may underlie changing trends in uterine cancer incidence include increased use of tamoxifen to treat breast cancer and changes in the rate of hysterectomy for sterilisation or treatment of conditions such as heavy menstrual bleeding.

In the UK, 77% of uterine cancers are endometrioid adenocarcinomas, 7% clear cell and serous carcinoma and 6% carcinosarcoma. The mortality rate increases with age, with almost two-thirds of deaths occurring in women aged 70 and over. As with many cancers, later stage disease at presentation is more common with increasing age and is associated with poorer survival. Poorer general health with co-morbidities in older patients may prohibit the use of effective uterine cancer treatments.


Table 5.1: Uterine cancer statistics

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Females</th>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new cases per year</td>
<td>8,288</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Incidence rate per 100,000 population¹</td>
<td>20.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of deaths per year</td>
<td>1,937</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Mortality rate per 100,000 population¹</td>
<td>3.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-year survival rate²</td>
<td>90.1%</td>
<td>England</td>
<td>2005–09</td>
</tr>
<tr>
<td>5-year survival rate²</td>
<td>77.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-year survival rate²</td>
<td>74.5%</td>
<td>England &amp; Wales</td>
<td>2007 (predicted)</td>
</tr>
</tbody>
</table>

1. European age-standardised
2. Adults diagnosed
3. Latest statistics available

5.1.1 Screening

There is no established population-screening programme for endometrial cancer. Screening is therefore limited to ‘high-risk’ individuals with a hereditary predisposition.

5.1.2 Genetics

Approximately 2–4% of endometrial cancer is attributable to Lynch syndrome, and up to 10% in women diagnosed under the age of 50. This is an autosomal dominant syndrome caused by germline mutations in the MLH1, MSH2, MSH6 or PMS2 genes, which encode components of the DNA mismatch repair (MMR) pathway.

Individuals with Lynch syndrome are at increased risk of cancers of the bowel, endometrium, ovary, urothelium, pancreas, biliary tract, stomach, brain, skin and possibly breast. If there is a personal or family history of cancer (i.e. suspected Lynch syndrome), then discuss this with the cancer genetics services.

5.2 Presentation and referral

• Post-menopausal bleeding (PMB) is the most common presentation, and all women with PMB warrant urgent investigation.
• An abnormal smear suggesting a glandular abnormality or endometrial cancer. These patients should be seen at a colposcopy clinic (some may have cervical cancer) or referred for urgent investigation.
• Irregular bleeding on HRT or in the peri-menopausal patient may indicate sinister pathology and should be referred for endometrial sampling.
• Post-menopausal discharge – bloodstained or purulent discharge should arouse suspicion of malignancy.

All patients with suspected endometrial cancer are to be referred within 24 hours to a gynaecology rapid assessment clinic.

This should ideally be a ‘one-stop clinic model’ with transvaginal ultrasonographic scanning (TVUSS) and endometrial biopsy available on the same day.

5.3 Initial diagnostic investigations

• Full history and pelvic examination
• Assessment of endometrial thickness by TVUSS (abdominal scan only if transvaginal scan is not possible)
• Endometrial assessment and biopsy if the endometrial thickness is 5mm or more
• If symptoms are persistent, biopsy is indicated even if the endometrial thickness is less than 5mm.

5.3.1 Diagnostic biopsy of the endometrium

Endometrial sampling and/or hysteroscopy can be performed as an outpatient procedure.

If the cavity view is suboptimal or the biopsy inadequate, this procedure may need to be repeated under a general anaesthetic.
5.4 Staging investigations

Blood tests: Full blood count (FBC), urea and electrolytes (U&E), liver function test (LFT), glucose, CA-125.

Imaging: The aim of imaging is to define the depth of myometrial invasion and to assess for extrauterine disease, particularly lymph node involvement. Imaging is usually organised in the referral unit and should include:

- magnetic resonance imaging (MRI) pelvis and abdomen to include the para-aortic nodes
- computerised tomography (CT) chest (and abdomen if not included on MRI scan)
- for atypical endometrial hyperplasia, an MRI pelvis should be arranged and managed as endometrial cancer if there is a suspicion of invasion.

All imaging is to be reviewed at the specialist multidisciplinary team (MDT) meeting prior to surgery.

5.4.1 Policy for low-risk endometrial cancer patients

Patients with grade 1 or grade 2 tumours which are confined to the endometrium or inner half of the myometrium on imaging will receive surgical treatment in the local unit. Surgery will be undertaken by a designated gynaecology oncologist.

All other patients are referred to the cancer centre for treatment.

5.4.2 FIGO system

The FIGO (Fédération Internationalé de Gynécologie et d’Obstétrique) Committee on Gynaecologic Oncology revised the surgical staging of endometrial cancer in 2008. This is a surgical staging based on the final pathology staging.

Stage I: Confined to the corpus uteri

IA: Tumour limited to endometrium and/or invasion to <½ myometrium
IB: Invasion to ≥½ myometrium

Stage II: The corpus and the cervical stroma are involved, but no extension outside the uterus

Stage III: Extension outside the uterus but confined to the true pelvis

IIIA: Tumour invades serosa and/or adnexae
IIIB: Vaginal metastases
IIIC: Metastases to pelvic and/or para-aortic lymph node
IIIC1: Positive pelvic nodes
IIIC2: Positive para-aortic nodes with or without positive pelvic nodes

Stage IV: Involvement of the bladder or bowel mucosa or metastasis to distant sites

IVA: Tumour invasion of the bladder and/or bowel mucosa
IVB: Distant metastases including intra-abdominal and/or inguinal lymph node

Endocervical glandular involvement only should be considered as stage I and no longer as stage II. Positive cytology has to be reported separately without changing the stage.
5.4.3 Endometrioid carcinoma grading

G1: Well-differentiated (composed predominantly of glandular pattern with 5% or less of solid non-squamous growth)

G2: Moderately differentiated (6–50% of tumour composed of solid sheets of cells)

G3: Poorly differentiated (> 50% off tumour composed of solid sheets of cells)

Serous carcinoma, clear cell carcinoma and carcinosarcoma are all classified as high grade tumours (Type II).

5.4.4 Histopathology

All tissue specimens removed at surgery are submitted for histopathological examination.

Specimens are handled according to the standard operating procedures of the Trust’s department of pathology, which cover fixation, dissection, block taking and reporting, and conform to national guidelines and minimum datasets (where available).

Histopathology reports on cases of hysterectomy for endometrial carcinoma will include the following:

• summary of clinical history
• macroscopic description of specimens including:
  – dimensions of tumour
  – apparent extent, including depth of myometrial invasion, cervical involvement, adnexal involvement
• microscopic description (synoptic report available) including:
  – histological tumour type (WHO classification)
  – grade
  – extent of myometrial invasion
  – presence or absence of lymphatic/vascular space invasion
  – presence or absence of cervical mucosal or stromal involvement
  – presence or absence of adnexal involvement including fallopian tubes and ovaries
  – FIGO stage.

All cases are evaluated by consultant pathologists with a special interest in gynaecological pathology, either at the units or at the centre and presented at the specialist gynaecological MDT prior to decision making about post-surgical management.

5.5 Management

Surgery is the mainstay of treatment with total hysterectomy and bilateral salpingo-oophorectomy.

The aim of surgical treatment is to stage the disease and to achieve local clearance of the disease.

Minimal access surgery (laparoscopic or robotic) significantly reduces morbidity and reduces the average length of stay. There are equivalent outcomes for survival. Therefore, a minimal access approach should be used whenever feasible.
Following surgery, the histopathology is reviewed in the specialist MDT and recommendations for adjuvant treatment are based on these histopathological findings.

Advanced disease may benefit from neo-adjuvant chemotherapy. Primary radiotherapy may be an option if surgery is not feasible due to extensive local disease.

### 5.5.1 Surgery

**Recommendation:** Minimal access surgery should be offered to all patients with endometrial cancer whenever feasible.

According to FIGO, nodal status should be known in order to fully stage the patient, although the clinical benefit remains under debate. Patients with well-differentiated endometrioid tumours and radiological stage IA disease have a small chance of nodal disease and therefore do not need to undergo lymphadenectomy. These patients can be treated at the cancer unit provided that the histology and imaging has been centrally reviewed.

However, for all other grades and presumed stage IB and above (on imaging), the surgery must take place at the cancer centre and the following should be carried out:

- detailed inspection of the abdominal/pelvic cavity, contents and retroperitoneum
- peritoneal washings
- total hysterectomy and bilateral salpingo-oophorectomy
- omentectomy should be performed if there is serous, clear cell, carcinosarcoma and endometrial stromal sarcoma on histology or evidence of extrauterine disease on imaging
- any suspicious nodes identified on either pre-operative imaging or during operation should be removed.

There may be circumstances in which a Wertheim (radical) hysterectomy and pelvic lymphadenectomy may be considered.

Vaginal hysterectomy may be considered where major abdominal surgery is contraindicated.

**Lymphadenectomy**

The role of lymphadenectomy in endometrial cancer remains controversial. Systematic pelvic +/- para-aortic lymphadenectomy evaluates nodal status and may guide adjuvant therapy. Randomised trials have not shown a survival advantage although retrospective data suggests there may be an advantage for systematic lymphadenectomy for high-risk patients. It can reduce the need for pelvic radiotherapy if all lymph nodes are negative. However, it does increase the risk of late toxicity, notably lymphoedema, particularly if adjuvant radiotherapy is also required.

Future developments include sentinel lymph node detection and assessment of new imaging techniques for staging disease. Participation in clinical trials assessing these techniques is recommended.

**Fertility-sparing treatment**

Grade 1 stage 1A endometrial malignancies can occur in young women who wish to achieve a pregnancy. In these women the possibility of using high dose progesterone in a trial of therapy may be appropriate under very close supervision.
All patients should have a staging MRI scan to evaluate the depth of invasion.

Cases must be discussed in the specialist MDT meeting with histopathology and imaging review.

There are strict inclusion criteria:

- pre-menopausal patients wanting to achieve a pregnancy
- grade 1 endometrioid adenocarcinoma
- no invasion of the myometrium on MRI scan.

**Treatment**

Provera 400–800mg daily (in divided doses if preferred) for 12 months.

Endometrial samples are taken in outpatients at 3 and 9 months and at hysteroscopy at 6 and 12 months.

Treatment can continue provided there is no disease progression on biopsy.

The treatment for endometrial cancer is continued for the year. If only complex atypical hyperplasia at diagnosis, then treatment can be discontinued if sampling shows resolution.

Patients should ideally go straight into fertility treatment after completing this treatment if the biopsies confirm a complete response.

If pregnancy is not achieved and no active treatment is being given, then another sampling should be taken at 6 months after completing treatment.

The response rates are about 75%, with 75% of these women having a prolonged response.

Completion hysterectomy after pregnancy should be discussed.

### 5.5.2 Adjuvant therapy

Total hysterectomy and bilateral salpingo-oophorectomy is the mainstay of treatment for endometrial cancer. Histological features and prognostic factors are determined from the surgical specimen and are used to guide adjuvant treatment. For low-risk patients, relapse-free survival is 95% with surgery alone.

Endometrioid carcinoma is the most common type of endometrial cancer. Serous carcinomas behave more like primary ovarian cancer with a greater propensity for peritoneal spread. Clear cell carcinoma and the rare squamous cell carcinoma tend to behave more aggressively compared with endometrioid carcinoma. Carcinosarcomas are very aggressive and adjuvant pelvic radiotherapy is given with proven benefit for carcinosarcomas.

Pelvic radiotherapy after surgery improves loco-regional control. In stage I disease, two-thirds of recurrences occur in the vaginal vault and vaginal vault brachytherapy alone significantly reduces the risk of central relapse. For intermediate-risk stage I patients, there is a 15–25% risk of loco-regional relapse after surgery, which can be reduced to around 5% with post-operative radiotherapy although there is no survival advantage. For high-risk stage I patients, lymph node involvement is around 35% and overall 5-year survival is 55–60%.

High-risk patients and those with locally advanced disease die of metastatic spread so the addition of concurrent and adjuvant chemotherapy is being investigated in a randomised trial (PORTEC-3). There is evidence for survival advantage in advanced (stage III/IV) disease. In high-risk early stage disease, the
EORTC study also showed a significant progression free survival improvement and trend to overall survival benefit.

Chemotherapy is usually given before radiotherapy but may be given afterwards for patients with definite residual disease.

There is no evidence to support the use of adjuvant hormone therapy.

### 5.5.3 Adjuvant radiotherapy

The need for post-operative radiotherapy will be decided by the age of the patient and the degree of differentiation, the cell type, the presence of vascular space involvement, the depth of myometrial invasion, and the presence or absence of lymph node metastasis.

Risk factors for local recurrence:

- poorly differentiated (G3) adenocarcinoma, clear cell carcinoma, serous carcinoma and carcinosarcoma
- invasion of the outer half of the myometrium
- involvement of cervix
- lymphovascular space involvement
- age >60 years.

The combination of external beam radiation therapy (EBRT) and pelvic lymph node dissection has a higher risk of lymphoedema than single modality treatment; if there has been an adequate lymph node dissection with no evidence of nodal metastases, then vaginal vault brachytherapy may be an alternative treatment to EBRT.

#### Stage I disease

There is no indication for adjuvant treatment for patients with low-risk disease; stage IA, grade 1 and 2 disease without lymphovascular space invasion (LVSI).

Poor prognostic factors for stage I disease include high-grade histology, invasion into the outer half of the myometrium and LVSI. For intermediate-risk stage I disease, those with at least one poor prognostic risk factor, vault brachytherapy is indicated to reduce the risk of vault relapse. In the randomised international trials GOG 99 and PORTEC, independent high-risk features also included age >60 years.

High-risk stage I disease (G3 IB, G2 IB with LVSI, G3 IA with LVSI) should have EBRT to treat the pelvic nodes, upper vagina and parametrium.

The combination of EBRT and pelvic lymph node dissection has a higher risk of lymphoedema; if there has been an adequate lymph node dissection with no evidence of nodal metastases, then vaginal vault brachytherapy is an alternative treatment.

#### Stage II disease

Patients with stage II disease should receive EBRT followed by vault brachytherapy to reduce the risk of vault and pelvic recurrence irrespective of grade or evidence of LVSI.

#### Stage III disease

Adjuvant pelvic radiotherapy is indicated for stage III disease. The para-aortic lymph nodes should also be included when there is evidence of common iliac or para-aortic nodal involvement.
Radiotherapy treatment

Further details on radiotherapy treatment are specified in Chapter 11.

Adjuvant external beam radiotherapy

Target volume:
- upper half of vagina, parametrium and pelvic lymph nodes
- para-aortic nodes if indicated
- pre-operative site of disease should be included when tumour extended through the serosa.

Organs at risk:
- bladder, rectum, bowel, femoral heads
- kidneys and spinal cord when including the para-aortic lymph nodes.

Planning technique:
- intensity modulated radiotherapy (IMRT)
- 3D-conformal RT may be used if the central pelvis needs to be included due to extrauterine disease.

Dose:
- 45 Gy in 25 # prescribed to 100% isodose or median dose over 5 weeks
- integrated boost IMRT can be used to boost the site of positive margin or involved nodes to total doses of 54–58 Gy
- alternatively, a conformal boost of 5–10.8 Gy in 3–6 # if required.

Brachytherapy

Each department will have standard treatment plans available for adjuvant vaginal vault brachytherapy.

All non-standard treatments (e.g. recurrent disease/stage IIIB disease) should be CT and/or MRI image guided with assessment of target volume coverage and doses to organs at risk.

Vaginal vault alone:
- 22 Gy in 4 # prescribed to 0.5cm from surface of applicator over 2 weeks.

With EBRT – adjuvant treatment:
- 8 Gy in 2 # prescribed to 0.5cm from surface of applicator over 2–7 days.

With EBRT – residual/recurrent disease:
- this will be individualised depending on the site of disease and response to treatment.
- 12–15 Gy in 3 # prescribed to 0.5cm from applicator surface (or to 100% on plan).

5.5.4 Adjuvant chemotherapy

Chemotherapy is considered for patients in whom there is serous histology, carcinosarcoma, extensive LVSI, extrauterine spread or positive lymph nodes.

Chemotherapy is usually given before EBRT but may be given afterwards for patients receiving brachytherapy alone or those with definite residual disease.
Chemotherapy treatment is delivered as described for ovarian cancer (see section 4.5.3).

Indications:

- serous carcinoma stage IB and above
- carcinosarcoma stage IB and above
- G3 stage IB with extensive LVSI and above
- any grade, stage IIIA
- lymph node involvement (stage IIIC)
- stage IV disease.

**Chemotherapy regimens**

- Doxorubicin (60mg/m²) with cisplatin (50mg/m²) every 21 days for 4–6 cycles
- Carboplatin (AUC5) in combination with paclitaxel (175mg/m²) every 21 days for 4–6 cycles
- Carboplatin (AUC5) every 21 days for 4–6 cycles

5.5.5  **Management of inoperable disease**

**Primary radiotherapy**

Radiotherapy may be used as primary treatment for more advanced or inoperable disease or where the patient is unfit for surgery. Five-year survival rates of 70–75% are obtained for stage II, 50% for stage III and 25% for stage IV disease.

Treatment planning as per cervical cancer (see section 7.4.4), using a combination of EBRT (45–50.4 Gy in 25–28 #) followed by image-guided brachytherapy. Rarely, brachytherapy alone may be indicated.

**Neo-adjuvant chemotherapy**

There is a role for neo-adjuvant chemotherapy in patients with inoperable stage III and IV disease. Delayed primary debulking surgery may be considered when there is a good radiological response after 3 cycles of chemotherapy.

5.5.6  **Management of recurrent or metastatic disease**

**Local treatment**

Surgery may be indicated for solitary relapse when previous radiotherapy has been given (as per cervical cancer, see section 7.5.1).

Radiotherapy is usually the treatment of choice for localised pelvic disease if not previously treated with radiotherapy.

Treatment is individualised with either external beam alone (simultaneous integrated boost (SIB)-IMRT or 2-phase conformal radiotherapy) or a combination of EBRT with brachytherapy in order to deliver a dose of at least 60–65 Gy (EQD2) to disease.

Short-course pelvic radiotherapy is successful in relieving bleeding and pelvic pain in patients with metastatic disease. Palliative radiotherapy is used to relieve pain from bone secondaries and symptoms from brain and nodal metastases.
**Systemic treatment**

*Chemotherapy*

Options include:

- Doxorubicin (60mg/m²) with cisplatin (50mg/m²) every 21 days for 6 cycles
- Carboplatin (AUC5) in combination with aclitaxel (175mg/m²) every 21 days for 6 cycles
- Carboplatin (AUC5) every 21 days for 6 cycles
- Doxorubicin (60mg/m²) every 21 days for 6 cycles
- Paclitaxel weekly (80mg/m²): 6 weeks on, 1 or 2 weeks off or 3 weeks on, 1 week off for 6 cycles
- Consider clinical trials.

*Hormonal therapy*

Medroxyprogesterone acetate 200mg daily
Letrozole 2.5mg daily
GnRH agonists (goserilin 3.6mg subcutaneous monthly)

### 5.6 Follow-up

The purposes of follow-up are as follows: detection of disease recurrence; symptom management; patient reassurance; outcome data.

In the absence of quality evidence, we should not dispense with the current strategy of routine regular follow-up clinic reviews for the majority of endometrial cancer patients.

The frequency of follow-up depends on the form of treatment (surgical/radiotherapy) and risk of distant or local recurrence.

Recurrence following surgery for early stage disease most frequently occurs in the vaginal vault and can be successfully salvaged with radiotherapy if detected early.

Documentation of late toxicity including bowel, bladder, vaginal toxicity and lymphoedema using CTC v4.0 should be discussed with the patient and recorded on their end of treatment summary. A holistic needs assessment (HNA) should be completed at the end of treatment to identify patient concerns (see Appendix 7).

#### 5.6.1 Patients treated with surgery alone

Patients will receive a follow-up appointment at the centre 2–3 weeks post-operatively for results and a discussion of whether any adjuvant therapy is required. If surgery has been the only treatment, the patients will then be followed up at the unit or centre as follows:

- 3-monthly intervals for the first year
- 4–6-monthly in the second year
- patient-initiated follow up or 6–12 monthly review to 5 years.

Vault smears are not indicated in the review assessment of patients who have been treated for endometrial cancer.
HRT is not contraindicated in women who have undergone hysterectomy for early stage disease with complete tumour excision and no other factors suggesting a contraindication for hormonal therapy.

### 5.6.2 Patients treated with radiotherapy/chemotherapy

Patients require a clinic appointment 4–6 weeks following completion of radiotherapy or brachytherapy. A member of the clinical oncology team (a doctor, nurse or clinic radiographer) will advise patients on the use of vaginal dilators which are given to aid in the prevention of late vaginal toxicity. A comprehensive guide to dilation following radiotherapy for gynaecological cancer is also provided for patients.

Follow-up schedule at either the centre or the unit:
- 3-monthly intervals for the first year
- 4-monthly in the second year
- 6-monthly for 5 years.

CT of chest, abdomen and pelvis is performed at 3–6 months in patients who have received chemotherapy as part of their adjuvant treatment or those with serous histology.

CT scan is given at 12 and 24 months for high-risk patients as nodal relapse may still be successfully salvaged if detected when asymptomatic.

Patients treated with primary radiotherapy will have a pelvic MRI +/- CT chest abdomen at 3 months to assess their response to treatment.

Patients may need to be referred for ongoing psychosexual counselling.

Patients will be discharged back to the GP at 5 years if there has been no evidence of disease, unless there is late toxicity in need of ongoing review.

### References


NICE (2010) *Laparoscopic hysterectomy (including laparoscopic total hysterectomy and laparoscopically assisted vaginal hysterectomy) for endometrial cancer*, Interventional procedure guidance 356.


6 Uterine Sarcomas

For further information, please see the London and South East Network Sarcoma Guidelines at: www.lsesn.nhs.uk.

6.1 Background

Uterine sarcomas include:

- leiomyosarcoma (LMS)
- endometrial stromal sarcoma
- undifferentiated endometrial sarcoma
- adenosarcoma.

Although carcinosarcomas have traditionally been included in trials assessing uterine sarcomas, they are now known to be an epithelial tumour and not a mesenchymal tumour.

The majority of diagnoses of uterine LMS are made incidentally following a hysterectomy for presumed fibroids. The incidence of uterine LMS following hysterectomy for presumed fibroids is approximately 0.5%.

Undifferentiated endometrial sarcoma is an aggressive disease with high metastatic potential. A more intensive approach to treatment of early stage disease in young, fit patients may therefore be considered.

Suspected uterine sarcoma will be managed following specialist multidisciplinary team (MDT) discussion and liaison with the local sarcoma specialist MDT.

6.2 Diagnosis and staging investigations

Ideally, staging investigations should be performed pre-operatively. However, as mentioned above, the majority of diagnoses of uterine LMS are unexpected so this is not usually feasible.

Imaging features: it is difficult to differentiate degenerating/atypical fibroid from sarcoma but suspicious features would include highly vascular lesions and rapid change in growth, particularly in post-menopausal women.

Investigations should include the following:

- Histology review including oestrogen and progesterone receptor status
- Computerised tomography (CT) of the chest, abdomen and pelvis
- Magnetic resonance imaging (MRI) of the pelvis is considered for further evaluation to determine local management
- Post-operative restaging CT chest, abdomen and pelvis if no pre-operative imaging.

6.2.1 Staging

Uterine sarcomas were previously staged using the FIGO (Fédération Internationalé de Gynécologie et d’Obstétrique) staging for uterine cancer. This has recently changed, taking into account the different modes of spread of uterine sarcoma and uterine carcinomas. The new FIGO 2009 staging is listed below.
Leiomyosarcoma

Stage I: Tumour is limited to the uterus
IA: ≤5cm in greatest dimension
IB: >5cm

Stage II: Tumour extends beyond the uterus, but within the pelvis
IIA: Involves adnexa of uterus
IIB: Involves other pelvic tissues

Stage III: Tumour infiltrates abdominal tissues
IIIA: 1 site
IIIB: >1 site
IIIC: Regional lymph node metastasis

Stage IV
IVA: Invades bladder or rectum
IVB: Distant metastasis (including intra-abdominal or inguinal lymph nodes; excluding adnexa, pelvic and abdominal tissues)

Endometrial stromal sarcomas and uterine adenosarcomas

Stage I: Tumour is limited to the uterus
IA: Limited to endometrium/endocervix
IB: Invades <½ myometrium
IC: Invades ≥½ myometrium

Stage II: Tumour extends beyond the uterus, but within the pelvis
IIA: Involves adnexa of uterus
IIB: Involves other pelvic tissues

Stage III: Tumour infiltrates abdominal tissues
IIIA: 1 site
IIIB: >1 site
IIIC: Regional lymph node metastasis

Stage IV
IVA: Invades the bladder or rectum
IVB: Distant metastasis (including intra-abdominal or inguinal lymph nodes; excluding adnexa, pelvic and abdominal tissues)
6.3 Management

6.3.1 Surgery

• Total abdominal hysterectomy.
• Commonly, diagnosis is confirmed following total abdominal hysterectomy and bilateral salpingo-oophorectomy.
• If any suspicion of sarcoma, avoid laparoscopic resection and morcellation of tumour.
• No need for routine pelvic lymphadenectomy.

6.3.2 Adjuvant radiotherapy

Post-operative radiotherapy is not routinely recommended in the case of completely resected uterine sarcoma.

Local recurrence can be reduced and there is a role for locally advanced disease. The data reported by the EORTC randomised study of patients with leiomyosarcomas, endometrial stromal sarcomas (and carcinosarcomas) demonstrated no improvement in overall survival or disease-free survival in those patients with completely resected disease.

In those patients where the tumour has breached the uterine serosa or involved adjacent structures, then post-operative radiotherapy may be considered.

In cases where the tumour extends to the vaginal vault, pelvic radiotherapy with a brachytherapy boost may be recommended.

6.3.3 Adjuvant chemotherapy

Adjuvant chemotherapy is not routinely recommended. It is considered in selected cases in the diagnosis of uterine leiomyosarcoma where the tumour has breached the serosa or when evidence of morcellation or tumour rupture at the time of resection.

Consider adjuvant chemotherapy in selected high-risk patients (doxorubicin and ifosfamide or gemcitabine and docetaxel).

Adjuvant endocrine therapy is considered in cases demonstrating high expression of ER/PR.

6.4 Recurrent and metastatic disease

6.4.1 Leiomyosarcoma and poorly differentiated sarcoma

Surgery

Selected patients with metastatic disease may be suitable for surgical resection, if clinically appropriate. Decisions are made on an individual patient basis, following discussion in the MDT.

Chemotherapy (see Sarcoma Guidelines at www.lsesn.nhs.uk)

• First-line chemotherapy is single agent doxorubicin.
• Second-line chemotherapy is usually single agent ifosfamide. This may also be used as first-line therapy if cardiac function is impaired.
• Third-line chemotherapy options include:
  – trabectedin (licensed)
  – gemcitabine ± docetaxel
  – dacarbazine.
• Combination doxorubicin and ifosfamide may be used for specific limited indications, including rapidly progressive disease, or when the increased response rate of combination chemotherapy is desirable.
• All patients will be considered for appropriate clinical trials open at each unit.

Radiotherapy

Patients can be treated with radiotherapy to palliate locally advanced or metastatic disease. Fractionation is decided on an individual patient basis.

6.4.2 Endometrial stromal sarcoma

Surgery

Endometrial stromal sarcoma is an indolent disease with potentially a very long natural history. It is therefore appropriate to consider surgical resection of metastatic disease on a selected individual patient basis.

Hormonal therapy

Hormonal therapy with aromatase inhibitors, GnRH analogues or progestogens may be used to treat and palliate metastatic disease.

Chemotherapy

If hormonal therapeutic options have been exhausted, palliative chemotherapy can be considered.
7 Cervical Cancer

7.1 Background

Worldwide, cervical cancer is the most common gynaecological cancer, and the third most common cancer in women, accounting for 9% of all female cancers. In 2008, there were 530,000 new cases and more than 273,000 deaths, predominantly in developing countries. In the UK the incidence has reduced significantly since the introduction of routine screening. In 2010 there were 2,851 new cases diagnosed, with a lifetime risk of 1 in 134 women, with 972 deaths from cervical cancer. Overall survival rates in England during 2005–09 were 84% at 1 year and 67% at 5 years.

Cervical cancer has the highest incidence in women aged 30–35 years with more than 60% of cases affecting women under 50 years old. While incidence rates for women aged 25–34 decreased by 34% between 1985–87 and 2000–02, rates have since increased by 60% in this age group. Risk factors for cervical cancer include human papillomavirus infection (HPV), smoking and socioeconomic status.

The optimal management of cervical cancer involves a multidisciplinary team. As cervical cancer commonly occurs between the ages of 30 and 45, this includes offering women with early disease the option of having fertility-conserving surgery, where appropriate. For those with intermediate or advanced disease, the aim is to minimise treatment side effects without compromising the outcome.

Table 7.1: Cervical cancer statistics

<table>
<thead>
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<th>Statistics</th>
<th>Females</th>
<th>Country</th>
<th>Year³</th>
</tr>
</thead>
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<tr>
<td>Number of new cases per year</td>
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<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Incidence rate per 100,000 population¹</td>
<td>8.4</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Number of deaths per year</td>
<td>936</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>Mortality rate per 100,000 population¹</td>
<td>2.3</td>
<td>UK</td>
<td>2010</td>
</tr>
<tr>
<td>1-year survival rate²</td>
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<td>England</td>
<td>2005–09</td>
</tr>
<tr>
<td>5-year survival rate²</td>
<td>66.6%</td>
<td>England &amp; Wales</td>
<td>2007 (predicted)</td>
</tr>
<tr>
<td>10-year survival rate²</td>
<td>63.0%</td>
<td>England &amp; Wales</td>
<td>2007 (predicted)</td>
</tr>
</tbody>
</table>

1. European age-standardised
2. Adults diagnosed
3. Latest statistics available


7.1.1 Screening and prevention

A national cervical screening programme is fully established and audited.

HPV vaccination is now offered to all girls aged 12+ years, which should reduce the risk of invasive cervical cancer.
7.2 Presentation and diagnosis

- Abnormal cervical smear
- Post-coital bleeding
- Bloodstained vaginal discharge
- Abnormal cervical appearance.

Patients with symptoms such as post-coital or inter-menstrual bleeding, post-menopausal bleeding or offensive bloodstained vaginal discharge, with or without a suspicious cervix, and irrespective of smear result, should be referred to the gynaecologist for further investigations: which may include colposcopy or examination under anaesthetic (EUA) with cervical and endometrial biopsies.

The unit colposcopy service assesses and sends cytological and histological biopsies. An EUA may be performed at the unit if considered appropriate.

- Intra-epithelial squamous and glandular neoplasia is managed, if appropriate, at the local colposcopy unit by local excision.
- Invasive malignancy is referred to the cancer centre.
- Patients with advanced disease may present initially to either an urologist or a general surgeon with ureteric obstruction or bowel complications. These patients should be referred to the gynaecological oncology team for further management.

7.3 Staging and other investigations

7.3.1 Staging


The two major international systems of classification of gynaecological cancers by their anatomic extent are respectively the FIGO (Fédération Internationalé de Gynécologie et d’Obstétrique) system, specific for gynaecological malignancies, and the TNM (Tumour, Node, Metastasis) system applicable to all sites and adopted by the UICC (International Union Against Cancer, now the Union for International Cancer Control) and the AJCC (American Joint Committee on Cancer).

Both classifications may be utilised in the same patient as long as the general principles of staging are understood and strictly adhered to. The FIGO system is utilised for the purposes of these guidelines.

The staging should be based on careful clinical examination before any definitive therapy. It is desirable that the examination under anaesthesia is performed by an experienced gynaecology oncologist jointly with a clinical oncologist. The clinical staging must under no circumstance be changed on the basis of subsequent findings. When it is doubtful to which stage a particular case should be allotted, the case must be referred to the earlier stage. Only if the rules for clinical staging are strictly observed will it be possible to compare results of different clinics and modes of therapy.
FIGO 2009

Stage I: The carcinoma is strictly confined to the cervix (extension to the corpus would be disregarded)

IA: Invasive carcinoma which can be diagnosed only by microscopy, with deepest invasion ≤5mm and largest extension ≥7mm
  • IA1: Measured stromal invasion of ≤3mm in depth and extension of ≤7.0mm
  • IA2: Measured stromal invasion of >3mm and not >5mm with an extension of not ≥7mm

IB: Clinically visible lesions limited to the cervix uteri or pre-clinical cancers greater than stage IA
  • IB1: Clinically visible lesion ≤4cm in greatest dimension
  • IB2: Clinically visible lesion >4cm in greatest dimension

Stage II: Cervical carcinoma invades beyond the uterus, but not to the pelvic wall or to the lower third of the vagina

IIA: Without parametrial invasion
  • IIA1: Clinically visible lesion ≤4 cm in greatest dimension
  • IIA2: Clinically visible lesion >4cm in greatest dimension

IIB: With obvious parametrial invasion

Stage III: The tumour extends to the pelvic wall and/or involves the lower third of the vagina and/or causes hydronephrosis or non-functioning kidney

IIIA: Tumour involves the lower third of the vagina, with no extension to the pelvic wall

IIIB: Extension to the pelvic wall and/or hydronephrosis or non-functioning kidney

Stage IV: The carcinoma has extended beyond the true pelvis or has involved (biopsy proven) the mucosa of the bladder or rectum. Bullous oedema does not permit a case to be allotted to stage IV

IVA: Spread of the growth to adjacent organs

IVB: Spread to distant organs

Post-surgical pathological staging (TNM classification)

Such findings may reveal unsuspected extent of disease. This should not change the clinical staging but should be recorded. Similarly, if a hysterectomy has been carried out for other reasons and an unsuspected cancer is found, such stages cannot be clinically staged but should be recorded separately. Additionally, restaging should not be carried out at the time of disease recurrence.

7.3.2 Staging investigations

Examination under anaesthetic
  • Inspection/palpation of the tumour
  • Biopsy
  • If stage IA suspected, a loop excision to provide a cone biopsy in a single piece should be performed
  • Cystoscopy +/-bladder biopsy
• Sigmoidoscopy if indicated
• Endocervical curettage and hysteroscopy may not be possible for more advanced disease.

**Blood tests**

• Full blood count
• Urea, electrolytes, creatinine
• Liver function tests
• HIV test.

**Radiology**

Although not currently included in the FIGO staging (other than IVU), imaging has an essential role for assessing the extent of disease and determining optimal primary treatment.

• Magnetic resonance imaging (MRI) scan of the pelvis and abdomen
• Computerised tomography (CT) scan of the chest and abdomen (if not included on MRI)
• CT-positron emission tomography (PET) scan (instead of CT scan) for locally advanced tumours to evaluate nodal extent which enables tailored radiation volumes.

**7.4 Management**

**7.4.1 General principles**

The optimal treatment of cervical cancer depends on the stage of disease, tumour volume, lymph node status and the fitness of the patient. It can incorporate surgery, radiotherapy and chemotherapy. Ideally, a single radical modality should be used as there is no survival advantage but greater morbidity with a combined surgical and radiotherapy approach.

Whereas surgery is preferable for early stage disease, radiotherapy is the treatment of choice when there is parametrial or nodal involvement which emphasises the need for optimal imaging to assess disease at presentation.

**Microinvasion**

The diagnosis of IA1 or IA2 disease can only be made on the basis of a cone biopsy specimen with negative margins, or on a trachelectomy or hysterectomy specimen.

If cone biopsy margins are positive, a second cone should be obtained, or the patient treated as for stage IB disease.

**Stage IA1**

• Patient wishes to retain fertility: cone biopsy
• Patient has completed her family: total/vaginal hysterectomy.

**Stage IA2**

• Modified radical hysterectomy and pelvic lymphadenectomy
• If there is no lymphovascular invasion in the biopsy specimen, consider extra-fascial hysterectomy and pelvic lymphadenectomy.
• Consider radical trachelectomy and pelvic lymphadenectomy, the latter by laparoscopy if preferred, if retention of fertility is required.

**Stage IB1: <2cm in diameter**
- Radical hysterectomy with pelvic lymphadenectomy
- Consider radical trachelectomy and extra-peritoneal lymphadenectomy if patient is young and wishes to preserve fertility.

**Stage IB1 and IIA1: Primary tumour <4cm in diameter, well or moderately differentiated squamous cell carcinoma. No lymphovascular space involvement**
- Radical hysterectomy with pelvic lymphadenectomy (+ bilateral salpingo-oophorectomy if >45 years).

**Stage IB1 and IIA1: Primary tumour <4cm in diameter, poorly differentiated and/or lymphovascular space involvement**
- Radical hysterectomy with pelvic lymphadenectomy OR radical radiotherapy and concomitant chemotherapy.

**Primary tumour >4cm in diameter, poorly differentiated and/or lymphovascular space involvement**
- Radical radiotherapy and concomitant chemotherapy.

**Unfit for radical surgery**
- Primary chemo-radiation unless poor performance status (≥2), impaired renal function or significant co-morbidities when radiotherapy alone.

**Stage IIB–IVA and lymph node involvement**
- Primary chemo-radiation unless poor performance status (≥2), impaired renal function or significant co-morbidities when radiotherapy alone.
- Adenocarcinoma of the cervix should be treated stage-for-stage as for squamous carcinoma.

### 7.4.2 Surgery

**Radical hysterectomy and pelvic lymph node dissection (Wertheim hysterectomy)**

This involves removal of the uterus and the adjacent parametrium and paracolpos. The cardinal and uterosacral ligaments are sacrificed to a varying degree depending on the type of radical hysterectomy. In addition, the upper third of the vagina (approximately) is removed.

A bilateral pelvic lymphadenectomy is also performed.

The lymphadenectomy may be performed first and any suspicious nodes sent for frozen section analysis. If positive, the procedure is abandoned and chemo-radiation given as the primary treatment.

Ovarian preservation for pre-menopausal women is discussed with the patient.

**Radical trachelectomy and pelvic node dissection**

This involves amputation of the cervix with removal of a 1cm cuff of vagina, and clearance of the pelvic nodes extra-peritoneally.
Indications

Management of disease with the following patient or tumour characteristics:

• a strong desire for childbearing without contraindications for adequate fertility; and understanding that a caesarean section would be necessary
• age sufficient to support childbearing (preferably <40 years)
• compliant with intensive follow-up
• compliant with the recommendation that a full total abdominal hysterectomy be performed post-completion of family
• stage IA1 plus lymphovascular space invasion
• stage IA2
• up to stage IB1 providing the cervical lesion is 2cm or less.

7.4.3 Histopathology

All tissue specimens removed at surgery are submitted for histopathological examination.

Specimens are handled according to the standard operating procedures of the Trust’s department of pathology, which cover fixation, dissection, block taking and reporting, and conform to national guidelines and minimum datasets (where available).

Histopathology reports on Wertheim’s hysterectomy cases will include the following:

• summary of clinical history
• macroscopic description of specimens, including dimensions of tumour, extent of local spread, distance from vaginal resection margin
• microscopic description (synoptic report available) including:
  – histological tumour type (WHO classification)
  – grade
  – presence or absence of lymphatic/vascular space invasion
  – depth of invasion and horizontal extent (measured in mm by ocular micrometre) of microinvasive or early invasive squamous carcinomas
  – status of original and paracervical surgical excision margins.
• FIGO stage.

All cases are reviewed by consultant pathologists with a special interest in gynaecological pathology, and presented at the combined gynaecological oncology clinic meeting prior to decision making about postsurgical management.

7.4.4 Radiotherapy

Preparation

• Referral to fertility unit if indicated
• Assess renal function: EDTA/creatinine clearance
• Maintain haemoglobin above 12 g/dl with transfusion as required.

Prolongation of total treatment time has an impact on survival and any gaps should be managed in accordance with the Royal College of Radiologists’ guidelines for category 1 patients.

**External beam radiotherapy**

Target volume:

- registration of PET-CT and MRI aids target volume localisation
- gross tumour volume (GTV), uterus, cervix, upper half vagina or at least 2cm below disease, parametria
- pelvic lymph nodes up to and including common iliac nodes.
- extended to include para-aortic nodes if common iliac or para-aortic nodes radiologically abnormal
- inguinal nodes are included if tumour involves the lower third of vagina
- node positive: define additional sub-volume to include positive lymph nodes for additional boost.

Organs at risk:

- bladder, rectum, bowel, femoral heads
- kidneys and spinal cord when including the para-aortic lymph nodes.

Planning technique:

- intensity modulated radiotherapy (IMRT) or 3D-conformal radiotherapy

Dose:

- 50–50.4 Gy in 25–28 # prescribed to 100% isodose or median dose daily over 5–5½ weeks
- integrated boost IMRT can be used to boost the involved nodes to total doses of 54–60 Gy within normal tissue tolerance
- if IMRT is not available, a parametrial boost can be given following brachytherapy for nodal or extensive parametrial involvement: 5.4 Gy in 3 # over 3 days.

Verification:

- departmental protocol for set-up
- image-guided treatment with volumetric imaging to assess target volume coverage.

**Concomitant chemotherapy**

Weekly cisplatin 40mg/m² (max 76mg) is given for up to 5 weeks unless contraindicated due to medical co-morbidities.

**Brachytherapy**

Each department should have local protocols for intrauterine brachytherapy treatment.

Brachytherapy is scheduled to occur in the final week or within 7 days of completing external beam radiation therapy (EBRT).

A diagnostic MRI scan is required in the final week of EBRT to aid brachytherapy planning.
MRI and/or CT image guided brachytherapy is to be used with intra-cavity and interstitial applicators selected to optimise target volume coverage.

GEC-ESTRO guidelines are followed with dose constraints calculated for EQD2 values added to external beam dose delivered.

*High-risk clinical target volume (HR-CTV)*

GTV at time of brachytherapy, whole cervix and extra-cervical extension as assessed clinically and grey zones on brachytherapy MRI in parametrium, uterus and vagina: D90 > 80 Gy.

Organs at risk:
- bladder: D2cc <90 Gy
- rectum: D2cc < 70–75 Gy
- sigmoid: D2cc < 70–75 Gy
- bowel: D2cc <70–75 Gy.

### 7.4.5 Adjuvant radiotherapy

Post-operative chemo-irradiation may be required depending on histological findings.

**Absolute indications (one factor required):**
- positive margin
- more than 1 lymph node with metastatic involvement
- incidental finding at simple hysterectomy.

**Relative indications (two+ factors):**
- lymphovascular invasion
- poorly differentiated tumour
- close margin (<5 mm)
- 1 lymph node involved.

**Technique**

As per endometrial cancer protocol (see section 5.5.3).

**Target volume:**
- pelvic lymph nodes including common iliac nodes, parametria and upper half of vagina.

**Dose:**
- 45Gy in 25# over 5 weeks with IMRT
- concomitant cisplatin chemotherapy: 40mg/m² (max 76mg) weekly up to 5 weeks
- vaginal vault brachytherapy: 8Gy in 2# prescribed to 0.5cm from applicator surface with high dose rate.
7.5 Recurrent and metastatic disease

7.5.1 Surgery

In a carefully selected group of women, pelvic exenterative surgery may be used with curative intent for central locally recurrent uterine malignancy where radiation therapy has previously been used. In the absence of recurrent disease, exenterative procedures have on rare occasions also been carried out for radiation necrosis, where the quality of the patient’s life would be improved. Exenterative procedures may be anterior, posterior or total. They may also be of the supra- or infralevator type depending upon the distribution of the disease. A multidisciplinary approach will be employed, involving the active participation of colorectal and urological surgeons as appropriate in the management of these patients.

Imaging with MRI scan and PET-CT scan should be performed before exenterative surgery or radical radiotherapy for recurrent disease.

7.5.2 Radiotherapy

In patients with pelvic recurrence who have not previously had radiotherapy, radical radiotherapy is the treatment of choice.

Treatment would be individualised depending on site of disease.

Aim for >65 Gy to macroscopic disease.

Stereotactic radiotherapy may be considered for selected patients who have previously received radiotherapy if surgical resection is not feasible.

7.5.3 Chemotherapy

Chemotherapy treatment is delivered as described for ovarian cancer (see section 4.5.3).

Chemotherapy regimens

- Cisplatin (50mg/m² day 1) with topotecan (0.7mg/m² days 1–3) every 21 days
- Carboplatin (AUC5) in combination with paclitaxel (175mg/m²) every 21 days
- Carboplatin (AUC5) every 21 days
- Cisplatin 75mg/m²
- Paclitaxel weekly (80mg/m²) – 3 weeks on and 1 week off.

Bevacizumab given with carboplatin and paclitaxel is available through the national Cancer Drugs Fund (CDF) for first-line relapse. It is commenced with chemotherapy, administered at 15mg/kg every 21 days.

Clinical trials should be considered if available.

7.6 Special circumstances

7.6.1 Incidental finding of cervical cancer

This refers to the finding of invasive disease following simple hysterectomy for a presumed benign condition. Before commencing treatment, a pelvic-abdominal CT or MRI scan and CT chest should be performed to assess disease extent. Treatment choice depends upon histological and radiological findings.
For stages IA2 and beyond, further treatment should be given as follows:

- If margins are positive, or if there is deep stromal or lymphovascular space invasion, pelvic chemoradiation should be given.
- Alternatively, further surgery including lymph node dissection can be discussed.

### 7.6.2 Cervical cancer during pregnancy

In general, the principles are the same as in non-pregnant women.

However, cone biopsy should only be considered if cytology/biopsy/colposcopy suggest possible invasion because of the problems of haemorrhage, abortion or premature labour.

All management plans should be decided on after full discussion with the woman and her partner and their wishes must be respected.

There is no evidence that the mode of delivery in women with IA1 disease influences outcome.

For all other stages of disease, management must be individualised and is influenced by stage of disease and gestation.

### 7.6.3 Neuroendocrine/small cell tumours

Distant relapse is common even with stage I disease and early systemic treatment is required.

Treatment involves a combination of local treatment with either surgery or radical radiotherapy after neo-adjuvant chemotherapy.

Treatment is based on current small cell lung cancer schedules with cisplatin/carboplatin and etoposide chemotherapy. Radiotherapy may be started after the second or third cycle of chemotherapy.

Radiotherapy should be as described above for squamous carcinoma.

### 7.7 Follow-up

The frequency of follow-up depends on form of treatment (surgical and/or radiotherapy) and size and histology of tumour at time of presentation.

All pre-menopausal patients should be offered hormone replacement therapy unless ovarian conservation has been achieved.

Early identification of residual disease following radiotherapy enables completion surgery to be considered.

Documentation of late toxicity including bowel, bladder, vaginal toxicity and lymphoedema using CTC v4.0 should be discussed with the patient and recorded on their end of treatment summary. An HNA should be completed at the end of treatment to identify patient concerns.

#### 7.7.1 Patients treated with surgery alone

Patients will receive a follow-up appointment at the centre 2–3 weeks post-operatively for results and discussion as to whether any adjuvant therapy is required. If surgery has been the only treatment, the patients will then be followed up at the unit or centre with vault / cervical smears:

- 3-monthly intervals for the first year
- 4–6-monthly in the second year
• annually until 5 years.

Imaging with MRI scan following trachelectomy at 6, 12 and 24 months following surgery.

### 7.7.2 Patients treated with radiotherapy

Patients will receive a follow-up appointment at the centre 4–6 weeks after the end of treatment.

The typical follow up schedule is:

- 3 monthly intervals for the first year
- 3–4 monthly in the second year
- 6 monthly for 3–5 years.

Imaging

- MRI scan at 3 months, 1 year, and 2 years.
- PET-CT at 3 months to assess metabolic response, particularly if equivocal MRI findings.

There is no role for routine cervical cytology after radiotherapy.

**References**


8 Carcinoma of Vagina

8.1 Background

Primary cancer of the vagina is rare and accounts for less than 2% of gynaecological cancers in the UK.

Table 8.1: Vaginal cancer, number of new cases, crude and European age-standardised (AS) incidence rates per 100,000 population, UK, 2008

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Wales</th>
<th>Scotland</th>
<th>Northern Ireland</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>194</td>
<td>19</td>
<td>33</td>
<td>12</td>
<td>258</td>
</tr>
<tr>
<td>Crude rate</td>
<td>0.7</td>
<td>1.2</td>
<td>1.2</td>
<td>1.3</td>
<td>0.8</td>
</tr>
<tr>
<td>AS rate</td>
<td>0.5</td>
<td>0.8</td>
<td>0.8</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>AS rate – 95% LCL*</td>
<td>0.5</td>
<td>0.4</td>
<td>0.5</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>AS rate – 95% UCL*</td>
<td>0.6</td>
<td>1.2</td>
<td>1.1</td>
<td>1.4</td>
<td>0.7</td>
</tr>
</tbody>
</table>

* 95% LCL and 95% UCL are the 95% lower and upper confidence limits around the AS rate


8.1.1 Screening

There is no routine screening for vaginal cancer.

8.2 Presentation and diagnosis

Symptoms depend largely on the size and site of the tumour and to some extent on the age of the patient. The majority of patients present with post-menopausal bleeding or discharge. However, the cancer may cause pain, discomfort or dyspareunia; urinary symptoms including dysuria, frequency and retention; or defaecatory problems such as tenesmus and rectal bleeding. A minority are asymptomatic, with the cancer detected at routine pelvic examination at the time of cervical screening, colposcopic examination or in routine gynaecology.

8.2.1 Asymptomatic patients with abnormal vaginal cytology

Vaginal intra-epithelial neoplasia (VaIN) is usually asymptomatic, and detected at the time of cytological review or colposcopy. It may be multifocal, but most commonly affects the upper vagina. It occurs at a lower mean age (around 50 years) than invasive disease.

VaIN may act as a pre-malignant precursor to invasive squamous cancer of the vagina in some instances, and, untreated, VaIN3 may progress to invasive cancer. It can be detected in some patients previously treated for cervical intra-epithelial neoplasia (CIN) (often in the ‘dog ears’ at the vaginal vault following hysterectomy).

Microinvasive or invasive carcinoma may be found in association with VaIN3, or occasionally occurs even after treatment for VaIN3.

Following diagnostic biopsy at colposcopy, treatment is dependent on the site and accessibility of the lesion. It may be treated by excision using sharp dissection, laser or cutting diathermy.
Alternatively, ablation with diathermy, hyfrecator or laser may be performed.

General anaesthesia may be required to permit adequate access.

There may be a place for brachytherapy in some situations.

Long-term follow-up is required, particularly in immunosuppressed individuals.

### 8.2.2 Symptomatic patients

There may be a palpable mass or fibrotic thickening on vaginal or recto-vaginal examination.

Such patients should be referred to a gynaecological oncologist for further investigations.

A definitive diagnosis can only be made by histological examination of an adequate biopsy specimen. This is usually performed as an incisional/excisional biopsy at the time of examination under general or regional anaesthesia.

### 8.2.3 Advanced disease

Patients with advanced disease may present with urinary or bowel complications and be seen initially by the urologist or general surgeon. These patients should be referred to the gynaecological oncology team for further management.

### 8.3 Staging and other investigations

- Colposcopic assessment and biopsy and/or examination under anaesthetic with/without biopsy
- Excision or wedge biopsy as appropriate
- Cystoscopy
- Radiology
  - magnetic resonance imaging (MRI) of pelvis
  - computerised tomography (CT) scan of the chest and abdomen
  - CT-positron emission tomography (PET-CT) prior to radical radiotherapy to assess nodal involvement.

### 8.3.1 TNM and FIGO staging

TNM and FIGO systems are used.

Table 8.2: Staging of cancer of the vagina

<table>
<thead>
<tr>
<th>TNM</th>
<th>FIGO</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tcis 0</td>
<td>Carcinoma in situ, intra-epithelial carcinoma (VaIN)</td>
<td></td>
</tr>
<tr>
<td>T1 I</td>
<td>The carcinoma is limited to the vaginal wall</td>
<td></td>
</tr>
<tr>
<td>T2 II</td>
<td>The carcinoma has involved the subvaginal tissues but has not extended onto the pelvic wall</td>
<td></td>
</tr>
<tr>
<td>T3 III</td>
<td>The carcinoma has extended beyond the true pelvis or has clinically involved the mucosa of the bladder or rectum. Bullous oedema as such, does not permit a case to be allotted to stage IV</td>
<td></td>
</tr>
<tr>
<td>T4 IVA</td>
<td>Spread of the growth to adjacent organs and/or direct extension beyond the true pelvis</td>
<td></td>
</tr>
<tr>
<td>IVB</td>
<td>Spread to distant organs</td>
<td></td>
</tr>
</tbody>
</table>

TNM system

N: regional lymph nodes (pelvic and inguinal)

Nx Regional lymph nodes cannot be assessed
No No regional lymph node metastasis
N1 Regional lymph node metastasis

M: distant metastasis

Mx Distant metastasis cannot be assessed
Mo No distant metastasis

8.4 Management

Radiotherapy is the most widely used primary treatment modality for all stages of the disease.

8.4.1 Surgery

The role of surgery (partial/total radical vaginectomy) in the management of vaginal carcinoma is limited. Stage I and II small lesions involving only the vault of the vagina with no or early parametrial involvement may be treated with radical vaginectomy/hysterectomy and pelvic and para-aortic node dissection. For lesions that lie adjacent to the bladder or rectum, radiation therapy should be considered; however, some may require exenteration. Where the lower third of the vagina is involved or there are suspicious or positive groin nodes, then radical vulvectomy and groin node dissection may be considered.

Vaginal reconstruction should be considered when vaginectomy is performed. In lesions involving the bladder or rectum, without distant spread or pelvic sidewall involvement, anterior, posterior or total exenteration may be considered. Exenterative surgery may also have a role in the treatment of radiation failures.
8.4.2 **Histopathology**

All tissues resected are submitted for histopathological examination. Specimens are handled according to the standard operating procedures of the Trust’s department of pathology, which cover fixation, dissection, block taking and reporting, and conform to national guidelines and minimum datasets (where available).

Histopathological reports will include the following:

- summary of clinical information provided, including reasons for biopsy
- specimen type
- macroscopic description, including accurate measurement of specimen, tumour and distance from resection margins
- microscopic report including:
  - histological tumour type
  - accurate measurement (optical micrometer) of depth and lateral extent of early invasive tumours
  - proximity to lateral and deep excision margins
  - presence or absence of lymphatic/vascular space invasion.

All cases are reviewed by a consultant pathologist with a special interest in gynaecological pathology, and presented at the combined gynaecological oncology meeting before decision making about further management.

8.4.3 **Radiotherapy**

**Site: Upper third of the vagina**

Treat as per stage IIA cervical cancer (see section 7.4.4).

**Site: Middle and lower third of the vagina**

Stage I lesions <2cm in dimension with no lymphovascular space involvement and grade 1–2 may be treated with brachytherapy alone or wide local excision provided the depth of invasion is <3mm.

All other cases are treated with radical chemo-radiation to whole vagina, pelvic (to common iliac region) and inguinal nodes delivering 45–50.4 Gy/25–28 # with weekly cisplatin chemotherapy. Radiologically abnormal nodes should receive additional boost doses to 55–60 Gy.

Total dose to the primary tumour should ultimately be in excess of 65 Gy (EQD2) using interstitial or superficial brachytherapy or external beam radiotherapy to boost the primary site.

Radiation is indicated post-surgery when poor prognostic features such as positive nodes are present or when there are close/involved margins.

8.5 **Recurrent and metastatic disease**

8.5.1 **Surgery**

Local recurrence in the vagina or central pelvis following radiotherapy may be treated by exenteration (see section 7.5.1).

PET-CT is required before radical surgery to exclude other sites of disease.
8.5.2 Chemotherapy

Metastatic or recurrent disease may be treated with chemotherapy.

Chemotherapy treatment is delivered as described for ovarian cancer (see section 4.5.3).

Chemotherapy regimens

• Carboplatin (AUC5) in combination with paclitaxel (175mg/m²) every 21 days
• Cisplatin (50 mg/m² day 1) and 5FU (800–1,000mg/m² days 1–4) every 3 weeks
• Carboplatin (AUC5) every 21 days
• Cisplatin 75mg/m²
• Paclitaxel weekly (80mg/m²) – 3 weeks on and 1 week off.

8.6 Follow-up

• 4–6 week follow-up appointment after completing treatment – a holistic needs assessment should be completed at this appointment
• 3-monthly follow-up for the first year
• 4–6-monthly follow-up for next 4 years
• MRI scan 3, 12 and 24 months after completing treatment

There is no role for routine cytology after radiotherapy.

Patients treated with surgery alone should have cytology repeated 6-monthly for the first year, then annually to 5 years. Discharge at 5 years if the patient is well, with normal cytology. Vault cytology is then done 3-yearly by the GP.
9 Cancer of the Vulva

9.1 Background
Carcinoma of the vulva is an uncommon tumour representing 4% of gynaecological malignancies, mostly affecting post-menopausal women. The annual incidence is estimated at 2–3 in 100,000 women. Fewer than 800 cases are registered in the UK annually. These guidelines have been compiled based on the Royal College of Obstetricians and Gynaecologists’ publication, Management of Vulval Cancer and by reference to other UK published Cancer Network Guidelines.

Some 90% are squamous cell carcinomas, while less common histological types are melanomas, adenocarcinomas, basal cell carcinomas, verrucous carcinomas, and sarcomas. The inguinal and femoral nodes are the primary sites of regional spread and involvement to pelvic nodes are considered as distant metastasis. The histological sub-type can determine the likelihood of nodal metastasis. The presence of nodal metastasis greatly impacts on survival, with 5-year survival rates falling from 80% to 50% if the groin nodes are involved and to 10–15% if the iliac or pelvic nodes are involved. Around 30% of women may present with nodal involvement. A review of published literature on this disease indicates that the size of the primary tumour and nodal status are the two most valuable factors when predicting survival from this disease.

Surgery has been the mainstay of treatment for this disease. Radical vulvectomy combined with bilateral groin node dissection has been practised widely since the 1950s when Stanley Way demonstrated that this was superior to simple vulvectomy for the management of this disease. However, there has recently been a change in practice as a result of a greater understanding of the disease. Increasingly, care of such patients is individualised with a partial radical excision and unilateral node dissection; or with sentinel node dissection in selected patients. Also, patients are increasingly being offered combined modality therapy with the use of radiotherapy or chemo-radiotherapy. This seems to be particularly useful for the management of patients with more advanced disease, or where excision of midline structures is not feasible.

These guidelines will relate to all histological types of cancer occurring on the vulva.

9.1.1 Screening
Women may have a number of precursor lesions, although screening for the disease has no value. Precursor lesions include vulval intra-epithelial neoplasia (VIN), Paget’s disease of the vulva and lichen sclerosis. Surveillance of women with these conditions is of value. A detailed cervical cytology history should also be obtained, and if necessary a smear should be performed, as women with vulval carcinoma are at increased risk of cervical malignancy.

9.2 Diagnosis and referral
As with other malignancies, early diagnosis is important to reduce the morbidity of treatment and to improve survival. Factors that can aid the GP in making an appropriate referral include:

- The disease is more common in older, post-menopausal women. There is, however, a rise in incidence in women in their 40s related to human papillomavirus infection.
- Tumours may be asymptomatic although women will often present with vulval pain, soreness, burning or pruritus.
- Any vulval symptoms should be taken seriously and prompt an examination.
• Any raised area should not be assumed to be a wart (particularly in older women), and younger women with persistent warts should be referred for a biopsy.

Patients with any of the following should be referred to the local rapid access clinic using a 2 week wait referral form:

• unexplained vulval lump
• vulval ulceration or bleeding
• persistent vulval pruritus or pain.

If invasive disease is suspected, patients should be referred to the local gynaecological cancer specialist for further assessment. Patients found to have a vulval malignancy should have their histology reviewed and care discussed at the centre multidisciplinary team (MDT) meeting.

Patients seen in the rapid access clinic should have a history taken. The date of their last cervical smear should be recorded. They should be examined by someone familiar with the appearance of vulval carcinoma, and preferably undergo vulvoscopy examination. If an obvious abnormality is seen, then a biopsy can be performed under either a local or a general anaesthetic. Care must be taken to record the size and location of the lesion. Any involvement of the vagina, urethra, base of bladder or anus should be noted. The regional groin lymph nodes should be palpated and any enlargement of these should be recorded.

In general, definitive treatment for the disease should not be performed without histological confirmation of malignancy. An exception to this rule exists if there is a small lesion (less than 2cm), which can be excised in the diagnostic biopsy. Surgery should not be performed on the groin nodes without confirmation of malignancy. A photograph (taken with patient consent) can help to identify the site of disease when small lesions are excised prior to referral to the centre.

9.2.1 Staging

This disease is staged by a clinical (surgical) staging system. The FIGO (Fédération Internationalé de Gynécologie et d’Obstétrique) staging system (2009) is used for the staging of vulval cancer (the American Joint Committee on Cancer (AJCC)) staging is included in brackets). The depth of invasion is defined as the measurement of the tumour from the epithelial-stromal junction of the adjacent most superficial dermal papilla to the deepest point of invasion.

Stage I (T1, N0, M0): The cancer is in the vulva or the perineum (the space between the rectum and the vagina) or both. The tumour has not spread to lymph nodes or distant sites.

Stage IA (T1a, N0, M0): These are stage I cancers with tumours that are 2cm or less that have grown into the underlying tissue no deeper than 1mm.

Stage IB (T1b, N0, M0): These are stage I cancers that have invaded deeper than 1mm and/or are larger than 2cm.

Stage II (T2, N0, M0): The cancer has grown outside the vulva or perineum to the anus or lower third of the vagina or urethra (T2). It has not spread to lymph nodes (N0) or distant sites (M0).

Stage IIIA (T1 or T2, N1a or N1b, M0): The cancer is found in the vulva or perineum or both (T1) and may be growing into the anus, lower vagina or lower urethra (T2). Either it has spread to a single nearby lymph node
with the area of cancer spread 5mm or greater in size (N1a); OR it has spread to one or two nearby lymph nodes with both areas of cancer spread less than 5mm in size (N1b). It has not spread to distant sites (M0).

**Stage IIIB (T1 or T2, N2a or N2b, M0):** The cancer is found in the vulva or perineum or both (T1) and may be growing into the anus, vagina or lower urethra (T2). Either the cancer has spread to three or more nearby lymph nodes, with all areas of cancer spread less than 5mm in size (N2a); OR the cancer has spread to two or more lymph nodes with each area of spread 5mm or greater in size (N2b). The cancer has not spread to distant sites (M0).

**Stage IIIC (T1 or T2, N2c, M0):** The cancer is found in the vulva or perineum or both (T1) and may be growing into the anus, lower vagina or lower urethra (T2). The cancer has spread to nearby lymph nodes and has started growing through the outer covering of at least one of the lymph nodes (called extracapsular spread; N2c). The cancer has not spread to distant sites (M0).

**Stage IVA:** Either of the following:

**T3, any N, M0:** The cancer has spread beyond nearby tissues to the bladder, rectum, pelvic bone or upper part of the urethra (T3). It may or may not have spread to nearby lymph nodes (any N). It has not spread to distant sites (M0);

OR

**T1 or T2, N3, M0:** The cancer is found in the vulva or perineum or both (T1) and may be growing into the anus, vagina or lower urethra (T2). Cancer spread to nearby lymph nodes has caused them to be stuck (fixed) to the underlying tissue or caused open sores (ulceration) (N3). It has not spread to distant sites.

**Stage IVB (any T, any N, M1):** Cancer has spread to distant organs or lymph nodes (M1).

### 9.2.2 Histopathology

All tissues resected are submitted for histopathological examination. Specimens are handled according to the standard operating procedures of the Trust’s department of pathology, which cover fixation, dissection, block taking and reporting, and conform to national guidelines and minimum datasets (where available).

Histopathological reports will include the following:

- summary of clinical information provided, including indications for biopsy
- specimen type
- macroscopic description, including accurate measurement of specimen, tumour and distance from resection margins
- microscopic report including:
  - histological tumour type
  - accurate measurement (optical micrometer) of depth and lateral extent of early invasive tumours
  - proximity to lateral and deep resection margins
  - presence or absence of lymphatic/vascular space invasion
  - description of adjacent vulval skin
  - total number of lymph nodes in each submitted group
  - total number of involved lymph nodes in each submitted group.
• Grade
  – G1: Well differentiated
  – G2: Moderately differentiated
  – G3: Poorly differentiated

All cases are reviewed by a consultant pathologist with a special interest in gynaecological pathology, and presented at the combined gynaecological oncology meeting before decision making about further management.

9.2.3 Investigations

Normally the first investigation performed is a biopsy. Although this is usually performed in clinic under a local anaesthetic, it can be performed in some instances in theatre under a general anaesthetic.

Lesions less than 2cm in size should be excised completely, after carefully recording the site of the disease.

A clinical photograph (taken with patient consent) provides a record of the site of disease prior to excision which will help guide any subsequent treatment if required.

Any other lesion should have a representative biopsy performed removing an area of epithelium where there is a transition from normal to abnormal skin.

Women with a proven diagnosis of vulval malignancy should have additional imaging to determine the extent of spread of their disease and nodal status. This may include:

• computerised tomography (CT) or magnetic resonance imaging (MRI) pelvis and abdomen (which should include the pelvic nodes if the groin is clinically suspicious)
• chest staging with CT scan
• ultrasound scan of inguinal nodes plus fine needle aspiration (FNA) of suspicious nodes
• examination under anaesthetic
• CT-positron emission tomography (PET-CT) to aid radiotherapy planning for locally advanced disease.

Consideration should be paid to the biopsy or FNA of clinically suspicious nodes or other metastases where the result may alter management.

9.3 Management

The goals of management are to treat the primary disease and sites of potential lymph node metastasis. Vulval cancer can present with different patterns of disease, and often care has to be individualised. Care should be taken to consider psychosexual aspects, co-morbidity, morbidity of the treatment and fitness for treatment. Treatment may involve a combination of surgery, radiotherapy and chemotherapy. It may also involve the use of plastic surgery techniques to close skin defects without undue tension. This may reduce the psychosexual morbidity associated with scarring of the vulva with conventional primary closure techniques.

Patients with a new diagnosis of cancer must be discussed in the gynaecological oncology MDT meeting. The treatment plan should be explained to the patient and they should be introduced to a clinical nurse specialist in gynaecological oncology. The GP should be informed of a new diagnosis of cancer within 24 hours.
9.3.1 Surgery

The mainstay of treatment for vulval cancer is surgery. This usually takes the form of a radical wide local excision of the tumour with a disease-free margin of at least 1cm. A reduced disease-free margin is associated with an increased risk of recurrence.

Consideration should also be given to the removal of adjacent areas of abnormal epithelium (e.g. VIN or lichen sclerosis) as it is possible that they could contain small, separate foci of invasion.

Surgery to confirm the nodal status is necessary for squamous tumours with a depth of invasion of 1mm or more as those tumours with a lesser depth of invasion are very unlikely to have nodal metastasis. As basal cell and verrucous carcinomas of the vulva are only very rarely associated with nodal metastasis, there is no need to perform a regional nodal biopsy. Women with malignant melanoma do not need a regional lymph node dissection but should be discussed in the malignant melanoma MDT where sentinel lymph node biopsy may be recommended.

For most women, the disease will be within 2cm of the midline and they should undergo a bilateral groin node dissection because of the extensive crossover of the lymphatic channels. In those women with lateral tumours, however, the groin node dissection can be performed on the ipsilateral groin. If the histology reveals metastasis in the ipsilateral groin, then a groin node dissection should be performed on the opposite groin or the patient should receive radiotherapy to both groins. A triple incision technique as advocated by Hacker can be performed as there is a low incidence of skin bridge recurrence seen in early stage disease. The groin node dissection should include both a superficial inguinal dissection as well as a deeper femoral dissection, as removal of the superficial nodes alone is associated with a higher groin recurrence rate.

The use of the sentinel lymph node procedure can be considered. Van der Zee has shown that this technique is reliable in accurately predicting nodal metastasis in patients with early vulval cancer (<4cm). Van der Zee et al. performed sentinel node procedure on 623 groins; they found that recurrence rate was low (n=6), survival was excellent and treatment-related morbidity minimal. Women undergoing sentinel lymph node dissection should have this performed as part of the ongoing multicentre European trial, GROINSS-II.

Bartholin’s gland and adenocarcinoma treatment is similar to that for invasive carcinoma of the vulva.

Basal cell carcinoma and verrucous squamous carcinoma

These tumours metastasise very rarely and therefore wide local excision is usually adequate. Palpable groin nodes may be excised but in the absence of clinical involvement the groin lymph nodes are not routinely removed.

Vulvo-vaginal melanoma

The risk of recurrence and therefore survival in vulval melanomas is mostly related to the size of the tumour and the depth of invasion. The management of the groin nodes in melanoma is controversial and has little effect on survival but may provide local control of the groins. Thus, if nodes are palpable then they should be removed. There is, however, no indication for groin dissection when the depth of invasion is less than 0.7mm as the risk of metastasis is almost zero. For patients with a depth of invasion between 1mm and 4mm but without palpable nodes, ultrasonography and FNA can be offered. The role of sentinel node removal in this group has yet to be decided. Interestingly, the role of cutaneous melanoma in this specific group has shown a survival advantage with sentinel node biopsy (MSLT-1).
Following surgery, patients with melanoma should be referred to the melanoma team to discuss adjuvant treatment.

### 9.3.2 Surgery for advanced disease

For women with advanced disease, the principles of surgery remain the same – i.e. excision with a margin of at least 1cm. The main consideration, however, is the proximity to, or involvement of, midline structures which may compromise the excision margin.

Primary radiotherapy or chemo-radiation is advised when surgery might be significantly morbid, and in some patients may remove the need for surgery altogether if a complete response is achieved. Two studies have suggested that pre-operative chemo-radiation can reduce the need for defunctioning stomas.

Clearly, the surgery required for advanced disease will be more radical than for early disease and more likely to involve radical vulvectomy or even exenterative surgery with the formation of faecal stomas or urinary conduit where necessary.

Plastic surgery techniques are more likely to be necessary to close the defects left with radical surgery for advanced disease. The plastic surgery team should be involved with these cases.

Significant supportive care and associated rehabilitation is likely to be needed for this group of patients.

Groin node dissection is appropriate in all cases of late disease unless there are fixed and/or ulcerated groin nodes present. In these circumstances the involvement of the nodes should be confirmed by biopsy (open, trucut or FNA). The appropriate treatment options include radical treatment using radiotherapy +/- chemotherapy or palliative radiotherapy. Surgery is an option if there is a partial response but still evidence of residual disease following radical radiotherapy.

### 9.3.3 Radiotherapy

For early stage disease, surgery is the treatment of choice. Radiotherapy given alone or in conjunction with chemotherapy may be used in advanced stage as a primary treatment when there is complete response or to downstage the tumour prior to surgery. The use of radiotherapy prior to surgery will of course be determined by clinical factors relating to the extent and site of the disease.

**Adjuvant radiotherapy**

Indications for adjuvant radiotherapy are as follows:

- **to perineum:**
  - tumour extending to <5mm from resection margin
  - recurrent local disease
- **to pelvic and inguinal nodes:**
  - two or more positive inguinal lymph nodes
  - one node with >50% tumour replacement
  - extracapsular nodal spread.
Target volume:
• inguinal, internal and external iliac and obturator nodes
• treatment may be given to either one or both sides of pelvis depending on risk factors and previous treatment
• vulva and vagina if indicated (as above).

Organs at risk:
• bladder, rectum, bowel, femoral heads.

Planning technique:
• intensity modulated radiotherapy (IMRT) or 3D-conformal radiotherapy
• direct electron field if treating perineum alone or for boost to vulva.

Dose:
• 45Gy in 25# prescribed to 100% isodose or median dose daily over 5 weeks
• boost the primary site or the groins to 54–60Gy for positive margins or extracapsular spread of disease.

Concomitant chemotherapy
Weekly cisplatin 40mg/m² (max 76mg) may be given for up to 5 weeks, particularly for poorly differentiated, lymphovascular invasion and node positive disease

9.3.4 Radical chemo-radiation for advanced vulval carcinoma
Radical radiotherapy given concomitantly with chemotherapy has been shown to significantly reduce tumour bulk and can allow curative surgery in patients presenting with T3 or T4 primary tumours and/or unresectable fixed or ulcerating groin nodes, or can be used as the primary radical treatment modality with surgery required only if there is residual disease. This treatment has significant acute morbidity and should only be considered in patients with a good performance status.

Dose
• 45 Gy in 25 # over 5 weeks given to the primary tumour and inguinal/pelvic nodes
• boost with either external beam radiation therapy (EBRT) or brachytherapy aiming to deliver at least 60–65 Gy to macroscopic disease.

Concomitant chemotherapy
• cisplatin 40mg/m² weekly up to 5 weeks
• cisplatin 50mg/m² days 1 and 29 and 5-fluoro-uracil 1,000mg/m² daily on days 1–4 and 29–32 of radiotherapy.

Assessment
• If planned as a ‘downstaging’ procedure (45 Gy), surgery should then be carried out 4–6 weeks after completion of radiotherapy.
• If treated with radical intent, response assessment should be undertaken at 8–12 weeks with imaging, examination under anaesthetic and biopsy.
9.3.5 Palliative radiotherapy for advanced inoperable vulval cancer

If patients are unfit for radical chemo-radiotherapy, then palliative radiotherapy may be considered. Shorter, less toxic courses of radiotherapy should be considered in these cases.

9.3.6 Treatment at relapse

Some patients, particularly those with local vulval relapse, can be salvaged with further surgery. Radical radiotherapy may be an option if radiotherapy has not previously been used. Generally, patients with nodal and/or distant failure have poor prognosis and palliative treatments are appropriate. Selected patients may be considered on an individual basis for more aggressive treatment.

9.3.7 Hormone treatment

Hormonal therapy has no significant place in the management of vulval cancer. There are no contraindications to the prescription of hormone replacement therapy in women who have suffered from this disease.

9.4 Follow-up

Patients treated for a vulval cancer should be followed up in a hospital setting, either at the local referral unit or at the cancer centre. They should be seen by personnel trained in the recognition of signs and symptoms of recurrence, and the morbidity of treatment.

Patients with the closest surgical margins are at greatest risk of local recurrence. In the longer term, these patients are at risk of developing further malignancy and, in those who relapse locally, there is a good chance of cure if treated promptly.

Follow-up should take place 3-monthly for the first year after treatment, 4–6-monthly for the second and third year, 6-monthly for the fourth and fifth years. Discharge after 5 years.

After radiotherapy follow-up should be 1–2 months post-radiotherapy, 3-monthly for 2 years, then 6-monthly to 5 years.

References


10 Imaging Guidelines

10.1 Ovarian cancer

10.1.1 Clinical background

Ovarian cancer is the most frequent cause of death from gynaecological malignancy. Neoplasms of surface epithelial origin account for 90% of malignant ovarian tumours, most commonly serous, followed by mucinous cystadenocarcinomas and endometrioid cancer. Spread is by local extension, transcoelomic, and less commonly by the lymphatic and haematogenous routes. Transcoelomic spread occurs when the ovarian cancer breaks through the epithelial surface of the ovary and spills into the peritoneal cavity, and is most commonly seen in the omentum, the under surfaces of the diaphragm, the surfaces of the small and large bowel, the surface of the liver and the pouch of Douglas. Lymphatic drainage is via lymphatic channels accompanying the ovarian vessels.

10.1.2 Who should be imaged?

Patients with known or suspected ovarian cancer following transvaginal ultrasound should be imaged using computerised tomography (CT) to assess the degree of peritoneal involvement, particularly if chemotherapy is planned as a primary treatment. Patients presenting with peritoneal carcinomatosis should be imaged to assess the extent of disease, plan biopsy techniques and assess other possible primary pathologies. CT is routinely used to monitor response to therapy and to detect recurrent disease. Magnetic resonance imaging (MRI) is used to characterise indeterminate ovarian cysts or masses found on ultrasound, particularly in young patients or when CA-125 is normal or only slightly elevated. MRI may also be used for staging the extent of peritoneal disease as a problem-solving tool as well as in some cases of relapsed disease.

10.1.3 Staging

Objectives

• To identify peritoneal involvement, particularly in the omentum, subphrenic spaces, falciform ligament, ascites and the serosal surfaces of the small and large bowel.
• To determine the involvement of pleural surfaces.
• To detect lymph node enlargement, particularly in the retroperitoneum, paracardiac regions.
• To identify deposits in the liver and spleen.
• To identify urinary tract obstruction.

Staging investigations

• CT of the chest, abdomen and pelvis should be performed to stage the primary tumour.
• MRI may also be used in selected cases to determine the extent of peritoneal disease prior to surgical planning or for response assessment in chemotherapy.

MRI for characterisation of indeterminate adnexal masses

MRI of the pelvis is indicated if an adnexal mass is indeterminate on ultrasound (or CT), in order to evaluate whether the ovarian pathology is likely to be benign or malignant. A bowel relaxant (buscopan or
glucagons) may be helpful. In this setting, MRI may help to determine whether the patient can be managed conservatively or should be referred for cancer surgery.

**Table 10.1: Protocol for imaging of ovarian tumours**

<table>
<thead>
<tr>
<th>Coils</th>
<th>Sequence</th>
<th>Plane</th>
<th>Slice thickness</th>
<th>Field of view</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdomino-pelvic surface coil</td>
<td>T1W</td>
<td>Axial</td>
<td>6 ± 2mm</td>
<td>Small (pelvis)</td>
<td>Lymph nodes/Ascites/Peritoneal/omentumal disease/Hydronephrosis</td>
</tr>
<tr>
<td></td>
<td>T2W</td>
<td>Axial</td>
<td>6 ± 2mm</td>
<td>Small (pelvis)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T2W</td>
<td>Sagittal</td>
<td>6 ± 2mm</td>
<td>Large (abdomen)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T1W + Fat Sat</td>
<td>Sagittal/coronal</td>
<td>8 ± 2mm</td>
<td>Small (pelvis)</td>
<td></td>
</tr>
<tr>
<td>Dynamic contrast study T1W GRE (+/-FS)</td>
<td>Axial</td>
<td>6 ± 2mm</td>
<td>Small</td>
<td>To characterise small tumours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T1W + Fat Sat</td>
<td>Sagittal/coronal</td>
<td>6 ± 2mm</td>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>DWI</td>
<td>Axial</td>
<td>6 ± 2mm</td>
<td>Pelvis</td>
<td>B 0 or 50 and a high b value (1,000–1,200)</td>
<td></td>
</tr>
</tbody>
</table>

**PET-CT**

FDG PET-CT may be useful on occasion to define disease extent (particularly when follow-up surgery is being considered), in particular if a solitary site of recurrence is suspected, in order to identify any other sites of disease.

**10.1.4 Follow-up**

Follow-up is conducted:

- to assess response to chemotherapy and is therefore performed at a frequency to correspond with the chemotherapy regimens
- to assess the need for and extent of interval debulking surgery
- when there is marked evidence of recurrent disease (i.e. elevation of CA-125) and it is then performed to provide a baseline prior to chemotherapy
- prior to salvage surgery for isolated recurrences.

**Tips**

- Coronal or sagittal reformatted CT images may be very useful to distinguish between intrinsic liver and splenic lesions and peritoneal deposits in the subphrenic spaces.
- Water-filled bowel may allow better detection of serosal involvement than when filled with positive contrast agent.
- Peritoneal deposits are better demonstrated on diffusion weighted imaging (DWI) sequences.
10.2 Endometrial cancer

10.2.1 Clinical background

In the UK, endometrial cancer is the most common gynaecological cancer with an incidence of over 6,000 cases per annum. Some 90% arise within the uterine epithelium and, of these, the majority are well differentiated (Grade 1). The depth of myometrial invasion and invasion of the cervix stroma are the most important prognostic factors, e.g. the incidence of nodal metastases increases from 3% for stage IA (less than 50% myometrial invasion) to 40% for stage IB (greater than 50% myometrial invasion). Hence, staging of the tumour is crucial in deciding whether lymphadenectomy is indicated. Demonstration of cervical involvement may also determine whether a radical rather than a simple hysterectomy is undertaken.

10.2.2 Who should be imaged?

At present, indications for MRI of the endometrium are not firmly established due to differing surgical practice with respect to lymphadenectomy. In most patients with histologically proven endometrial carcinoma, MRI is used to stage the extent of disease.

10.2.3 Staging

Objectives

- To identify whether there is myometrial invasion and, if so, to determine its depth.
- To assess whether the tumour has spread outside the body of the uterus into the endocervical mucosa or into the cervical stroma.
- To identify whether the tumour has spread into the parametrium or the serosa.
- To identify lymph node enlargement. (Note: retroperitoneal nodes are considered regional.)
- To identify distant spread.

Staging investigations

MRI is the modality of choice for local staging, although CT can be used if there is a contraindication to MRI. At present, the reported FDG-PET/CT performance in initial staging is not sufficient for this to be recommended apart from individual cases following discussion in the MDT.
Table 10.2: Protocol for imaging of endometrial cancer

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Plane</th>
<th>Slice thickness</th>
<th>Field of view</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2W</td>
<td>Sagittal (SE)</td>
<td>5 ± 2mm</td>
<td>Whole pelvis</td>
<td></td>
</tr>
<tr>
<td>T2W</td>
<td>Axial (SE)</td>
<td>5 ± 2mm</td>
<td>Whole pelvis</td>
<td></td>
</tr>
<tr>
<td>T2W</td>
<td>Oblique axial (SE) (perpendicular to long axis of uterus)</td>
<td>5 ± 2mm</td>
<td>Small</td>
<td>To view the relationship between the primary tumour and the myometrium in a second plane</td>
</tr>
<tr>
<td>T1W + Fat Sat</td>
<td>Oblique axial</td>
<td>5 ± 2mm</td>
<td></td>
<td>To optimise the assessment of the possibility of myometrial invasion</td>
</tr>
<tr>
<td>T1W + Fat Sat + IV contrast medium dynamic run 0, 30, 60, 90, 120, 150 seconds</td>
<td>Sagittal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1W + Fat Sat + IV contrast medium</td>
<td>Oblique axial</td>
<td>5 ± 2mm</td>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>T1W</td>
<td>Axial</td>
<td>5 ± 2mm</td>
<td>Large</td>
<td>Mid-renal hilum to perineum</td>
</tr>
</tbody>
</table>

DWI may be used to evaluate depth of myometrial invasion. Pelvic phased array coil is used. Anti-peristaltic agent should be used for improving the quality of images by reducing motion artefact.

CT is used to detect distant metastases and can be used if MRI is not possible for staging the pelvis.

10.2.4 Follow-up

- Frequency depends on the stage and histology of the disease at presentation. More advanced disease of higher grade histology is reviewed every 6 months following surgery, for up to 2 years. For the rare case that may be treated only with radiotherapy, follow-up is to assess response.
- MRI of the pelvis is the optimal modality for suspected local recurrence.
- CT is used for detecting distant metastatic disease.
- FDG-PET/CT may also be used in some cases, particularly for recurrent disease when considering radical salvage surgery or radiotherapy.

10.3 Carcinoma of the cervix

10.3.1 Clinical background

The vast majority of cervical carcinomas are of squamous cell histology (85–90%); adenocarcinomas and adenosquamous carcinomas account for 10%. Cervical carcinoma spreads by direct tumour invasion through the stroma into the parametrium towards the pelvic wall. The uterosacral ligaments can also act as pathways of spread to the pelvic sidewall. Spread also occurs upwards into the corpus of the uterus or downwards into the vagina. Spread to the lymphovascular space extends to the paracervical, parametrial
and presacral chains, and then the external iliac (obturator) internal iliac and common iliac nodes. Retroperitoneal and supraclavicular nodal involvement is only seen late in the course of the disease. Spread to the lungs, bone and liver is unusual. In macroscopically visible tumours that are less than 4cm in longest diameter, the key decision on imaging is to decide whether the parametrium is invaded, as this often determines the form of treatment. In tumours greater than 4cm, the important imaging role is to determine the extent of disease, both local and distant. In some cases in young women with small tumours who wish to retain the option to have children, consideration may be given to a tracheectomy, conserving the uterus. Here, imaging must indicate the size of the tumour, its distance from the internal os, the length of the cervix and the size of the uterus.

10.3.2 Who should be imaged?

All patients with biopsy proven cervical cancer need imaging to evaluate the local extent of disease, to assess the pelvic and para-aortic lymph nodes and to exclude distant metastases.

Response to chemo-radiotherapy is assessed with MRI and PET-CT, with early detection of persistent disease enabling the option of salvage surgery.

Patients with suspected local recurrence are optimally imaged with MRI while PET-CT is required to look for any alternative sites of disease when radical treatment for recurrence is being considered.

10.3.3 Staging

Objectives

- To assess the size of the primary tumour.
- To identify the presence of parametrial spread.
- To identify proximal extension in relation to the internal os, particularly in small tumours in patients being considered for tracheectomy.
- To identify invasion of the vagina, bladder or rectum.
- To evaluate the pelvis and abdominal lymph nodes.
- To detect distant metastases.

Staging investigations

MRI is the modality of choice for local staging, although CT can be used if there is a contraindication to MRI. In locally advanced cervix cancer, staging should include FDG-PET/CT.
### Table 10.3: Protocol for imaging of carcinoma of the cervix

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Plane</th>
<th>Slice thickness</th>
<th>Field of view</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1W</td>
<td>Axial</td>
<td>5/6 ± 0.5/1mm</td>
<td>Whole pelvis</td>
<td>To identify pelvic lymph nodes</td>
</tr>
<tr>
<td>T2W</td>
<td>Axial</td>
<td>5/6 ± 0.5/1mm</td>
<td>Whole pelvis</td>
<td></td>
</tr>
<tr>
<td>T2W</td>
<td>Sagittal</td>
<td>5/6 ± 0.5/1mm</td>
<td>Small</td>
<td>To assess position of tumour in relation to internal os and adjacent tissues.</td>
</tr>
<tr>
<td>T2W Perpendicular to cervix</td>
<td>Oblique</td>
<td>3mm</td>
<td>Small</td>
<td>To assess for parametrial spread</td>
</tr>
<tr>
<td>T1W or T2W *</td>
<td>Coronal or axial</td>
<td>6/7 ± 1mm</td>
<td>Large</td>
<td>Abdominal lymph nodes and kidneys</td>
</tr>
<tr>
<td>Optional sequence: T2W Parallel to cervix</td>
<td>Oblique</td>
<td>3mm</td>
<td>Small</td>
<td>To assess for parametrial spread</td>
</tr>
</tbody>
</table>

*Choice of axial or coronal upper abdominal images can be according to local preference*

DWI is optional as a problem-solving tool or in response assessment. Coil selection will depend on the equipment available but a surface coil should be used for pelvic images. Endocavity coil (endovaginal) may be used where available for early stage disease, particularly if trachelectomy is being considered. An anti-peristaltic agent should be used.

CT may be needed if MRI is not possible or if staging advanced disease when PET/CT is not available.

FDG PET-CT is not generally used in the evaluation of early stage carcinoma of the cervix. However, it is indicated in determining the extent of disease in locally advanced carcinoma of the cervix where the patient is being considered for radical treatment. FDG-PET-CT findings may help to inform the radiotherapy planning.

FDG-PET/CT is the modality of choice for determining the extent of metastatic recurrent disease and in patients being considered for pelvic exenteration.

### 10.3.4 Follow-up

- Frequency of follow-up depends on the form of treatment (surgical and/or radiotherapy) and on the size and histology of the tumour at the time of presentation.
- Following radiotherapy: MRI at 3 months, 1 year and 2 years. If brachytherapy is being considered, pelvic MRI is indicated for planning purposes.
- Following surgery: MRI at 1 year and 2 years. Following trachelectomy, patients can also have an MRI at 6 months following surgery.
Tips

• Care should always be taken to ensure that the oblique axial T2 sequence is truly at right angles to the long axis of the cervix, otherwise mistakes can arise in interpreting parametrial invasion.

• Following intervention (such as a cone biopsy), changes can arise at the site of the biopsy that can be mistaken for the primary tumour. It is recommended that an interval of 1 week to 10 days be allowed between the biopsy and MRI. If trachelectomy is being considered in a patient highly likely to have a tumour clinically, then MRI should be performed prior to cone biopsy.

• Occasionally, when the primary tumour remains poorly seen, dynamic contrast-enhanced scans in the sagittal plane may be used to better delineate tumour extent (as in endometrial cancer).

10.4 Carcinoma of the vagina and vulva

10.4.1 Clinical background

Primary vaginal cancer is rare. Some 85% are squamous cell occurring in the upper vagina in post-menopausal, often elderly women. About 5–10% are adenocarcinomas, 2–3% leiomyosarcomas and 2–3% melanomas. Superficial carcinomas at the vaginal vault may be treated by vaginectomy and pelvic lymphadenectomy or radiotherapy. Tumours of the lower third of the vagina are usually treated by radiotherapy.

10.4.2 Who should be imaged?

All patients who present with histologically proven carcinoma of the vagina or vulva.

10.4.3 Staging

Objectives

• To identify nodal disease in the pelvis and inguinal regions.

• To determine the extent of the primary tumour.

• To identify intra-abdominal spread.

Staging investigation

MRI is the modality of choice for local staging, although CT can be used if there is a contraindication to MRI. Ultrasound with or without fine needle aspiration should be used to assess the groin nodes. In locally advanced disease, staging may include FDG-PET/CT.

For low vaginal and vulval tumours, ultrasound with fine needle aspiration biopsy may be extremely valuable in planning the lymph node dissection.
Table 10.4: Protocol for imaging of carcinoma of the vagina and vulva

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Plane</th>
<th>Slice thickness</th>
<th>Field of view</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1W</td>
<td>Axial</td>
<td>5 ± 1mm</td>
<td>Whole pelvis and perineum*</td>
<td>To identify pelvic lymph nodes. A coronal plane may also be helpful</td>
</tr>
<tr>
<td>T2W</td>
<td>Axial</td>
<td>5 ± 1mm</td>
<td>Whole pelvis and perineum</td>
<td>To localise primary lesion</td>
</tr>
<tr>
<td>STIR</td>
<td>Axial</td>
<td>5 ± 1mm</td>
<td>Perineum</td>
<td>Particularly to identify vulval tumours and inguinal nodes</td>
</tr>
<tr>
<td>T1W</td>
<td>Axial</td>
<td>6 ± 1/2mm</td>
<td>Medium/large (abdomen)</td>
<td>In cases with pelvic nodal enlargement</td>
</tr>
</tbody>
</table>

* Particularly for tumours of lower third.

In some cases, gadolinium contrast enhancement may be helpful in delineating the extent of the disease.

**10.4.4 Follow-up**

If groin node recurrence is suspected, ultrasound and fine needle aspiration are indicated.

If there is suspicion of local clinical recurrence, MRI may be helpful in assessing the extent of local disease. CT or FDG-PET/CT is used if metastatic disease is being assessed.

**Tips**

- Care should be taken to include the entire perineum, inguinal and femoral regions to ensure that all possible sites of infiltration and nodal involvement are included.
11 Radiotherapy

Radiotherapy for gynaecological cancer may be given as primary treatment, radical treatment of solitary relapse, as adjuvant therapy and for palliation of symptoms from pelvic disease or distant metastases. The challenges include the need for large radiotherapy fields to encompass the lymph node regions, close proximity to radiosensitive organs at risk, and highly mobile target volumes which can significantly change in shape, size and position throughout a course of treatment. Traditionally, the total deliverable dose (and therefore cure rate) has been limited by the risk of long-term toxicity.

Recent advances in radiotherapy have had significant impact on outcomes.

• With external beam radiotherapy, intensity-modulated radiotherapy (IMRT) reduces the dose to bowel, bladder and rectum by 40–60%, which has been shown to reduce the incidence of long-term toxicity.
• With simultaneous integrated boost IMRT (SIB-IMRT) it is possible to increase the dose to involved nodes or areas not suitable for brachytherapy.
• Image guidance with online cone beam computerised tomography (CBCT) or tomotherapy enables verification of coverage of mobile target volumes. This has the potential to reduce the volume of irradiated normal tissue and to allow dose escalation.
• With computerised tomography/magnetic resonance imaging (CT/MRI) compatible applicators and new planning systems, image-guided brachytherapy individualises treatment delivery to maximise the dose to residual disease.
• Stereotactic radiotherapy has a role in treating solitary recurrences when surgery is not feasible.

The indications for radiotherapy are detailed in the preceding tumour-specific chapters.

11.1 External beam radiotherapy

Each centre should have local protocols for treating gynaecological cancer. These should include the following:

**Localisation:**
• Patient position and immobilisation as per local protocol.
• Intravenous contrast is required to aid definition of tumour and nodal volumes.
• Each centre must have a specific bladder and rectal filling protocol.

**Target volume delineation:**
• Registration of CT-positron emission tomography (PET-CT) and MRI to the radiotherapy planning CT scan can aid volume definition.

**Technique:**
• IMRT is the optimal treatment for adjuvant pelvic radiotherapy.
• 3-D conformal radiotherapy or IMRT is required for all radical treatments.
• Integrated boost IMRT enables higher doses to be delivered to involved nodes.
11.1.1 Planning aims and tolerances

Each centre will have local planning policies. When an integrated boost IMRT technique is used, the total dose and dose per fraction to each target volume must be specified.

Planning target volume (PTV)
- 99% volume covered by minimum 95% prescribed dose
- 50% volume covered between minimum 99% and maximum 101% isodose
- <1% volume receiving more than 105% prescribed dose.

Organs at risk

For adjuvant pelvic radiotherapy delivering 45 Gy in 25#, the organs at risk are within tolerance and the planning aim is to minimise dose to normal tissue. Avoid hotspots (>103%) within the organs at risk.

For radical treatments delivering higher doses, dose limits will depend on the relation of the tumour to the organ at risk; e.g. whether there is a large percentage of rectum within the target volume.

When EBRT is delivered in conjunction with brachytherapy, the dose limits will need to be adjusted to take into account the brachytherapy contribution to total dose.

Table 11.1: Example tolerances for organs at risk

<table>
<thead>
<tr>
<th>Organs</th>
<th>V50</th>
<th>V60</th>
<th>V65</th>
<th>V70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectum:</td>
<td></td>
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(Note: depends on whether entire peritoneal cavity or individual bowel loops are contoured.)

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<th>Organs</th>
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<td>46 Gy</td>
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11.1.2 Treatment verification
Each centre should determine its systematic set-up error for the pelvic radiotherapy technique to aid selection of appropriate CTV/PTV margins.

Image guidance with CBCT/tomotherapy can assess internal organ motion and detect changes in target volume shape or position.

All patients treated with IMRT and patients treated with conformal radiotherapy for mobile tumours (e.g. cervical cancer) should be verified using volumetric imaging. The patients should be scanned at least weekly to ensure that the target volume is being treated adequately. If there is high mobility due to target position or rectal/bladder filling, then daily guidance is required.

11.1.3 On treatment review
A radiographer, nurse or doctor must review patients at least weekly and an assessment should be made regarding acute side effects.

A member of the clinical oncology team (doctor, nurse or clinic radiographer) will advise patients on the use of vaginal dilators which are given to aid in the prevention of late vaginal toxicity.

Patients require a clinic appointment 4–6 weeks following completion of radiotherapy or brachytherapy.

11.2 Palliative radiotherapy
Radiotherapy will be planned on an individual basis.

Planning technique:
• virtual simulation
• 3D-conformal treatment plan for small volume disease receiving high dose palliation.

Dose:
• EBRT 30 Gy in 10 daily # of 3 Gy delivered over 2 weeks
• EBRT 20 Gy in 5 daily # of 4 Gy delivered over 1 week
• EBRT 6–8 Gy as a single #
• EBRT 27–30 Gy in 5–6 # over 2–3 weeks.

11.3 Brachytherapy
Each centre will have local protocols for intrauterine, vaginal and interstitial brachytherapy treatments.

All intrauterine insertions are image guided using GEC-ESTRO guidelines.

11.4 Stereotactic radiotherapy
Stereotactic body radiotherapy (SBRT) is an option that can deliver radical treatment for selected patients with solitary recurrences of gynaecological cancer when surgery is not possible and when conventionally fractionated external beam radiotherapy is contraindicated due to:
• prior radiotherapy
• field edge recurrence
• dose limiting organ at risk (e.g. high risk of kidney damage).

Cases should be discussed in the specialist multidisciplinary team for suitability and cases planned on an individualised basis.

References


12 Family History of Gynaecological Cancer

A dedicated clinic with access to genetics services and breast or bowel cancer family clinics should ideally be set up for the management of patients with a family history of gynaecological cancers.

Women may present with family or personal history of ovarian/breast or bowel/endometrial cancers suggesting BRCA or Lynch type mutations respectively.

Full history including family history should be taken, noting age at diagnosis for each family member, relationship with the patient (are the cancers from the same side of the family?), type of cancer, personal history of cancer and whether any of the affected individuals are still living.

Refer to genetics service for assessment of risk, counselling and genetic testing if appropriate and possible testing of the rest of the family if a mutation is found.

If genetic testing is not feasible but there is a significant family history, then treat as below.

If genetic mutation is detected, discuss the treatment options outlined below.

12.1 BRCA gene mutation

In women at least 40 years of age and family complete, offer laparoscopic bilateral salpingo-oophorectomy (BSO) (as long as there is no contraindication to laparoscopic surgery), removing the whole length of the fallopian tubes.

Refer to breast cancer family clinic for discussion about investigations and possible prophylactic surgery.

In women between 35 and 40 years, BSO may be considered but this needs more careful discussion and consideration in a multidisciplinary setting.

If the patient does not wish to have BSO or is below the age of 40 or wishes to have further children, serial ultrasound scan and CA-125 measurement may be offered annually after careful discussion. Currently there is no evidence of effectiveness for this and data from the UKFOCS study is awaited. Discuss this with the patient as well as false positive (beware of CA-125 levels in pre-menopausal women) and false negative test results.

12.2 Lynch type mutations

Offer laparoscopic hysterectomy and BSO (as long as there is no contraindication to laparoscopic surgery).

Refer to bowel cancer family clinic for consideration of aspirin therapy and colonoscopy.

In women between 35 and 40 years, total laparoscopic BSO may be considered but this needs more careful discussion and consideration in a multidisciplinary setting.

Hormone replacement therapy (HRT) may be appropriate after surgery in cases of pre-menopausal women.

If the patient does not wish to have total laparoscopic BSO or is below the age of 40 or wishes to have further children, serial ultrasound scan, pipelle biopsy and CA-125 measurement may be offered annually after careful discussion. Currently there is no evidence of effectiveness for this and data from the UKFOCS study is awaited. Discuss this with the patient as well as false positive (beware of elevated CA-125 levels in pre-menopausal women) and false negative test results.
13 Clinical Nurse Specialist/Key Worker

"Patient experience is only as good as the weakest point in the patient pathway."

Cancer patient panel

13.1 The key worker

The key worker or clinical nurse specialist (CNS) is a point of contact for patients, ensuring that they have access to information and support services as well as ensuring that ongoing holistic needs assessments (HNAs) are consistently carried out. The key worker contributes to increased patient satisfaction and empowerment.

There should be a single named key worker for the patient’s care at a given time, identified by an appropriate healthcare professional for each individual patient. The name of the current key worker should be recorded in the patient’s case notes/multidisciplinary team (MDT) proforma. Patients may be allocated a key worker prior to an MDT meeting or at the meeting if deemed more appropriate. The journey for the gynaecological cancer patient is complex and it is recognised that the key worker role may transfer to other teams and CNSs along the clinical pathway. The core nurse member of each MDT is responsible for ensuring that the key worker is identified.

Each MDT should agree key worker responsibilities in line with national guidance and the proposed model of care (with the patient’s consent and agreement). Key workers should have protected time to carry out the responsibilities of this role. They should:

- coordinate the patient’s care and promote continuity, e.g. ensuring that the patient knows who to access for information and advice, especially at the point of referral to a partner organisation
- attend and actively participate in the MDT and other relevant meetings, thus supporting patient advocacy
- identify named key worker/CNS with contact details on diagnosis, i.e. business cards should be offered to patients
- complete an assessment of the patient-identified physical, emotional, practical, psychological and spiritual needs (HNA) at diagnosis and after treatment (within 31 days), making onward referral when necessary (see section 13.2)
- provide information specific to the local or specialist MDT, including self-help groups and support services
- provide sensitive, non-judgemental support and information to patients and families affected by a diagnosis of gynaecological cancer
- ensure effective referrals to appropriate services and access to information to suit individual patient preferences/needs (following the principles of NHS patient information prescriptions (see section 13.3)
- ensure that there is open communication by use of bleep, telephone and answering machine for patients where possible
- be present in clinic when patients are given diagnosis and/or where treatment plan is discussed (including provision of support for unexpected diagnosis)
• maintain contact with patients throughout disease trajectory with patient agreement and, where appropriate, for localities and most importantly when patients return home
• support enhanced recovery programmes, ensuring that CNS support is considered as part of the wider programme, if it is not already set up; this must include a joined-up pathway of care with social services and rehabilitation
• support survivorship models on improved education and support for patients, carers and healthcare professionals to promote supported self-management and personalised care planning.

Where patients are given a diagnosis outside a dedicated 2 week wait/gynaecology oncology clinic, the CNS must arrange with the team CNS to be present at diagnosis or to provide the patient with contact details if not present, thus providing immediate access and support from the cancer team.

Nursing recruitment, workforce planning and nurse education within acute, primary and secondary settings should reflect the complex needs of women with gynaecological malignancy.

The importance of specialist cancer and women’s health qualifications should be recognised for nurses working with this patient group. Networking, mentoring, succession planning and coaching should be established in order to ensure a sustainable and appropriately experienced nursing workforce.

**Recommendation:** Patients with cancer should not notice their transition between organisations in the provider network. They should not feel that they have been abandoned when their care is transferred from a specialist centre to their local hospital or primary care.

### 13.2 Holistic needs assessment

All gynaecological cancer patients’ physical, emotional, social, psychological and spiritual needs should be appropriately assessed, identified and reviewed.

The LCA Survivorship Group has recommended the adoption of an HNA tool based on a distress thermometer and concerns checklist. The tool allows patients to specify what is of most concern to them, and so directs subsequent discussion and intervention to addressing these needs. It has scope to cover physical, emotional, spiritual, financial and welfare, and practical concerns. It is anticipated that as the HNA becomes embedded within the pathway, patients will start to ask for an HNA and professionals need to be able to respond to this.

It is recommended that every patient should be offered an HNA at key pathway points.

Following each assessment, a care plan is developed between the patient and healthcare professional about how the identified areas of concern will be addressed (see Chapter 14). This may cover provision of information (e.g. through an information prescription), onward referral for specialist assessment and intervention (e.g. menopause management), or things which the patient themselves can do (e.g. contact their HR department about graduated return to work options).

**Recommendations:** Assessment of gynaecological cancer patients with HNA should be performed within 31 days of diagnosis and at the end of first-line treatment. It should also be performed whenever a person requests one.

Individualised care plans should be developed and implemented in conjunction with patients and carers, taking into account their needs, wishes and preferences.
The LCA HNA tool can be found in Appendix 7.

13.3 Patient information

All patients with a diagnosis of gynaecological cancer should be offered clear and comprehensive information, both verbal and written, on all aspects of their diagnosis, treatment and care. This should be tailored to the individual requirements of the patients and their carers. This information should cover:

- referral
- investigations
- diagnosis
- multidisciplinary team (MDT) and key worker details
- treatment
- after treatment – survivorship information
- continence
- sexual functioning
- lymphoedema
- symptom control
- psychological support
- complementary therapies
- support groups/information workshops
- financial advice
- specialist palliative care
- bereavement.

The National Cancer Action Team introduced information prescriptions (IP) across the country. The Information Prescription Service (www.nhs.uk/ips) provides a wealth of information from NHS Choices and its charity partners. The service has been developed to offer healthcare professionals a framework to quickly and efficiently provide comprehensive information to the patients they care for.

The aim is to give patients and their carers accurate, reliable and personalised information to help them manage their health and live more independently, as well as information which can signpost them to other resources such as support groups, cancer information support centres and relevant third sector organisations. The type, amount and level of information required should be determined by the patient.

In the Trusts across the LCA which have access to IP, this should be considered as one way of giving information to the patients. Individual Trusts will use leaflets when giving information for local procedures and have ways of documenting this.

There are clear benefits to the NHS in offering reliable, accurate information. There is good evidence that patients who are given and supported to use information to make decisions about their care:

- are able to manage their long-term conditions more effectively
- use NHS services less often than patients who have not been given information
• have fewer repeat consultations/fewer unscheduled admissions.

(www.nhs.uk/ips)

The Royal College of Obstetricians and Gynaecologists has a range of information leaflets that may be of use to provide patients with information.

These are available to download from: www.rcog.org.uk/recovering-well

Information after a laparoscopic hysterectomy:
www.rcog.org.uk/files/rcog-corp/LaparoscopicHysterectomyRecoveringWell0710.pdf

Information after a vaginal hysterectomy:

Information after an abdominal hysterectomy:
www.rcog.org.uk/files/rcog-corp/AbdominalHysterectomyRecoveringWell0710.pdf

13.4 Treatment summary

The treatment summary provides a summary of the cancer treatments received by the patient and planned follow-ups, including signs and symptoms of which to be aware. For signs and symptoms requiring urgent review, in and out-of-hours contact details are included. The aim is to provide information not only to the patient but also to the GP about the possible consequences of cancer and its treatment, signs of recurrence and other important information.

Recommendations: Every patient should be offered a written care plan associated with every holistic needs assessment (HNA).

An end of treatment consultation should be offered to every patient. This should include an end of treatment HNA and an associated written treatment summary.
14 Survivorship in gynaecological cancer

14.1 Fertility

Each cancer centre must have an agreed pathway for referral to a specialist fertility unit.

Since many patients with gynaecological cancer are less than 40 years old, fertility is an important consideration. In particular, following pelvic radiotherapy the uterus cannot carry a pregnancy and any fertility options require future surrogacy. The established options are oocyte or embryo cryopreservation which require ovarian stimulation and egg collection which can delay the start of treatment. Alternative investigational techniques, including ovarian tissue cryopreservation, have resulted in live births. Patients should therefore be referred to a specialist fertility unit if they wish to discuss options prior to starting radiotherapy.

14.2 Sexual function

Both the diagnosis and the treatment of gynaecological cancer can have a devastating effect on a patient’s sexuality and sexual functioning.

Following radical hysterectomy, some patients report altered sensation. However, radiotherapy can also lead to shortening and drying of the vagina with loss of lubrication and pliability.

Shortening due to the formation of adhesions in the vagina can be reduced by using a vaginal dilator starting a few weeks after treatment. This will maintain patency of the vagina, enabling resumption of sexual activity at a later date and also examination in the follow-up clinic. Dryness of the vagina may be helped by a lubricant gel and also by hormone replacement therapy (HRT) which, in addition, can help increase libido which is often low in this group of patients (see section 14.6).

**Recommendation:** Where clinically appropriate, all patients should be offered vaginal dilators and taught their use. Information should follow the recommendations within the International Guidelines on Vaginal Dilation After Pelvic Radiotherapy (International Clinical Guideline Group 2012).

Patients can access their clinical nurse specialist (CNS) for specialist assessment, support and interventions for sexual function.

Specialist psychosexual counselling should be available for complex issues that are outside the experience level of the CNS.

14.3 Pelvic floor dysfunction

A pelvic floor muscle exercise programme is important to prevent prolapse, stop urinary or anal incontinence and improve sexual satisfaction. The ward physiotherapist should visit the patient post-operatively and provide information and advice on pelvic floor exercises, which should be supported by written information.

If pelvic floor dysfunction (specifically incontinence and/or sexual dysfunction) has not resolved within 3 months, referral should be made to a women’s health physiotherapist for assessment and subsequent treatment.
14.4 Bladder toxicity

All centres should be able to offer advice for patients developing bladder toxicity following treatment and have pathways in place for referral of patients with the condition.

14.5 Bowel toxicity

All centres should be able to offer advice for patients developing bowel toxicity following treatment and have pathways in place for referral of patients with the condition.

14.6 Treatment-induced menopause

Treatment-induced menopause can have a significant impact on quality of life. It is important to discuss options early when treatment is likely to cause premature ovarian failure.

When deciding management, consider whether the patient had a hormone-sensitive tumour (e.g. endometrial stromal sarcoma) or did not have a hormone-sensitive tumour (e.g. cervical cancer).

14.6.1 Causes

**Surgery**

- Bilateral oophorectomy causes immediate menopause.
- One ovary removed or simple hysterectomy can result in premature menopause.

**Pelvic radiotherapy**

- Oocytes are very sensitive to radiotherapy which accelerates the natural process of follicular atresia. The effective sterilising dose reduces with age, from 20Gy at birth to 9Gy at 45 years.
- Transposition of the ovaries prior to radiotherapy may preserve ovarian function. The optimal position depends on the radiotherapy fields – e.g. a high lateral position within the paracolic gutters for cervical cancer.

**Chemotherapy**

- The likelihood of induced menopause is related to age and type of chemotherapy agent.
- Younger women may experience menopause at an earlier age as a result of previous chemotherapy.

**Endocrine therapy**

- Tamoxifen can induce menopausal symptoms by its mechanism of action. Ovarian reserve is not directly affected and symptoms may resolve (and menstrual function return) when tamoxifen is stopped.
- Women should continue to take contraceptive measures while on tamoxifen.

14.6.2 Menopausal symptoms

**Vasomotor symptoms**

These include hot flushes, night sweats, insomnia, palpitations and headaches.

Hot flushes and night sweats are the most common symptoms of the menopause and its prevalence is highest in the first year. Although they are usually present for less than 5 years, some women are still troubled by flushes beyond the age of 60 years.
These symptoms usually respond well to oestrogen, although non-pharmacological approaches are also available. HRT is contraindicated in hormone-dependent tumours unless discussed and approved by a consultant oncologist.

**Other symptoms**

These include weight gain, hair thinning and hair loss, forgetfulness, loss of concentration, irritability and fatigue.

Some of these symptoms may be linked to menopause either directly or indirectly, e.g. through sleep disruption.

Urogynaecological symptoms are discussed below in section 14.6.4.

### 14.6.3 Treatment of menopausal symptoms

#### Non-pharmacological symptom management

**Herbal remedies**

The Royal College of Obstetricians and Gynaecologists (RCOG) and the Royal College of Nursing (RCN) have detailed patient leaflets on the efficacy as well as contraindications/safety concerns for those with hormone-dependent cancers.

RCOG: [www.rcog.org.uk/files/rcog-corp/Alternatives%20to%20HRT%20for%20Symptoms%20of%20Menopause.pdf](http://www.rcog.org.uk/files/rcog-corp/Alternatives%20to%20HRT%20for%20Symptoms%20of%20Menopause.pdf)


**Lifestyle**

Women who follow a healthy diet and exercise regularly cope better with menopausal symptoms. A healthy lifestyle also protects against other diseases such as heart disease and osteoporosis. Excess caffeine and alcohol can worsen flushes and increase the risk of osteoporosis.

Wearing cotton loose clothing is thought to help during flushes, as does reducing or avoiding spicy foods ([www.menopausematters.co.uk](http://www.menopausematters.co.uk)).

**Hormone replacement therapy**

HRT is the most effective therapy for vasomotor symptoms and urogenital atrophy. Other menopause-related symptoms, such as joint and muscle pains, mood swings, sleep disturbances and sexual dysfunction (including reduced libido), may improve.

Oestrogen-based replacement therapy is the standard treatment for women with early menopause and can be taken until the average age of natural menopause, 52 years in the UK.

Women with premature menopause who take HRT may need a higher dose of oestrogen to control vasomotor symptoms than women in their 50s.

HRT is usually contraindicated in women who have had a previous hormone-dependent cancer unless discussed and approved by a consultant oncologist.

Some patients report persistent tiredness, lack of energy, reduced libido or sexual function despite apparently adequate doses of oestrogen replacement. This may be more common in oophorectomised women and consideration should be given to additional treatment with testosterone.
Testosterone replacement is recommended only when HRT is used. Androgen replacement in the UK is licensed to be used only in women who undergo bilateral salpingo-oophorectomy. Testosterone can be replaced using a patch, gel or implant. The effects of testosterone use in women who have had previous hormone-dependent cancers are not known.

Women respond differently to different types, routes and doses of HRT and sometimes several adjustments of therapy are required. If possible, any type should be tried for 3 months before deciding whether or not a change is required.

**Choice of HRT**

HRT is the replacement of oestrogen and/or progesterone. HRT can be replaced using oral or transdermal routes. The route of administration depends on women’s preference, availability, cost and safety.

- **After a hysterectomy**: usually oestrogen is replaced alone.
- **Uterus still in situ (e.g. after radiotherapy)**: oestrogen is taken with progesterone which prevents stimulation and thickening of the endometrium, reducing the risk of endometrial cancer.

Further information is available on the RCOG and RCN websites, and on the website of the British Menopause Society (www.thebms.org.uk/factdetail.php?id=6). A full discussion and written information are recommended when HRT is first initiated.

**Non-hormonal strategies**

Some antidepressants have been found to be beneficial in reducing or stopping vasomotor symptoms. Venlafaxine and citalopram reduced hot flushes in women with breast cancer. The dose should be started low and increased gradually. A greater reduction in hot flushes is seen at higher doses but side effects such as nausea, dizziness, agitation, sleep disturbances and confusion may be worse. These groups of drugs are also recognised to reduce libido and can impair sexual response.

Gabapentin has also been shown to reduce flushes. It may be particularly beneficial for symptoms of aches, pains and paraesthesia from which some menopausal women suffer.

Alternative agents include pregabalin and clonidine.

These treatments will require ongoing monitoring by the GP after initiation as vasomotor symptoms can improve over time.

**14.6.4 Urogynaecological symptoms**

The lower urinary and genital tracts have a common embryological origin. Oestrogen and progesterone receptors have been found in the vagina, urethra and trigone. Thus, oestrogen deficiency can lead to symptoms of urogenital atrophy.

Symptoms include: vaginal dryness and soreness, vaginal and vulval irritation, dysuria, increased vaginal discharge, vaginal odour, vaginal infections, recurrent urinary tract infections, dyspareunia and vaginal bleeding associated with sexual activity.

Symptoms of vaginal atrophy, in contrast to the vasomotor symptoms associated with menopause, do not improve without treatment and do not diminish over time. Therefore treatment should be initiated before irreversible atrophic changes occur.
Symptoms of vaginal atrophy may also develop at a much later date when compared with vasomotor symptoms and the strategies for its management may take longer to produce symptom benefit.

The severity of and strategies to manage vaginal atrophy can be influenced by the type of oncological treatment and its side effects. Vaginal/vulval graft-versus-host disease, pelvic radiotherapy and type of endocrine therapy used can exacerbate urogenital symptoms. Pelvic radiotherapy may reduce the number of oestrogen receptors and the subsequent response to topical oestrogen therapy.

**Strategies to manage vaginal atrophy**

**Lifestyle**

- Smoking cessation
- Regular sexual intercourse can improve vaginal atrophy, presumably as a result of stimulating increased blood
- Hygiene – women should be discouraged from using scented soaps, lotions, or panty liners, which all tend to dry the vulvovaginal tissues.

**Vaginal lubricants**

- Women should be given the details of lubricants as personal preference is often important for compliance with treatment. Vaginal lubricants facilitate sexual activity and offer short-term symptom relief.

**Vaginal moisturisers**

- Moisturisers can provide more long-term relief of vaginal dryness and need to be applied 2–3 times a week whether or not sexual activity is to take place. The following preparations are available on prescription in the UK:
  - ReplensMD – contain a bioadhesive polycarbophil-based polymer, which attaches to mucin and epithelial cells on the vaginal wall and retains water. Women can experience vaginal discharge when ReplensMD is used initially. A minimum use of 3 months is recommended to see symptom improvement.
  - Hyalofemme – contains hyaluronic acid, a natural molecule with hydrating properties. Symptom relief can be observed in 30 days, particularly when considering self-reported dyspareunia and itch sensation.

**Topical oestrogen**

- Urogenital atrophy can be treated with either systemic or topical oestrogens but the most effective treatment is local oestrogen therapy. This route of administration provides a lowered potential for systemic absorption and reduced occurrence of adverse effects.
- Local treatment options include low-dose natural oestrogens, such as:
  - vaginal oestradiol – Vagifem 10 or 25mcg (tablet) and Estring 7.5mcg (ring)
  - vaginal oestriol – Gynest cream 0.01%, Ortho-Gynest 0.5% (pessary) and Ovestin cream 0.1%.
- Low levels of systemic absorption from vaginal oestrogens are observed which may have theoretical risks for women who have had previous hormone-dependent cancers.
- If the recommended topical oestradiol and oestriol preparations are used, there is no need to add a progestogen for endometrial protection.
• Topical oestrogens also appear to have a positive effect on urinary frequency, urgency and to a lesser extent urge incontinence and reduce the incidence of recurrent urinary tract infections.

• Treatment of vaginal atrophy is required in the long term, if not lifelong, as symptoms return on its cessation.

**Vaginal dilators**

• Some post-menopausal women suffer from vaginismus as a result of the dyspareunia associated with vaginal atrophy. In addition to the use of lubricants, moisturisers and/or topical oestrogen, the use of gradual vaginal dilatation can be considered. Vaginal dilators can promote confidence, as well as allowing women to assess vaginal capacity, prior to resuming sexual activity.

### 14.6.5 Bone health

The promotion of bone health is a priority in the management of treatment-induced menopause. Women who have experienced an early menopause should be recommended HRT until at least the normal age of the menopause (around 50). This will help to reduce bone loss and to avoid the symptoms and other complications of prolonged oestrogen deficiency, unless there are contraindications to oestrogen replacement.

Women should have a baseline DEXA scan within the first year of the treatment-induced menopause. The frequency of follow-up DEXA scans should be based on the scores of the first scan, and any concurrent treatment.

### 14.7 Lymphoedema

All centres should be able to offer advice for patients at risk of developing lymphoedema and have pathways in place for the referral of patients with the condition. Lymphoedema may cause physical, social and psychological problems that may in turn have a profound effect upon a patient’s quality of life. Management of the condition concentrates on conservative treatment measures. These encourage the patient to become actively involved in the care of their swollen limb in order to gain maximum benefit from treatment followed by long-term control of the swelling.

#### 14.7.1 Referral

Patients with any limb swelling should initially be medically assessed within the hospital to establish the cause of swelling, to establish the disease status of the patient and to facilitate the correction of any factors such as low albumin, thrombosis or infection, before any residual swelling is treated.

All patients with lymphoedema, however mild, as a result of their cancer and/or its treatment, can then be referred to the lymphoedema service.

#### 14.7.2 Treatment

Success in controlling lymphoedema depends upon:

• appropriate screening of patients at risk in order to provide education and advice
• early and prompt referral of patients with limb swelling
• follow-up at regular intervals to monitor progress.

Four principles of treatment are employed simultaneously in the management of lymphoedema:
• skin care and education to minimise the risks of infection and inflammation
• exercise to maintain good lymph flow
• massage to stimulate lymph drainage
• external support with compression to limit the accumulation of fluid in the limb.

Patients who present with cellulitis should be treated with antibiotics as per local guidelines, and referred to the appropriate lymphoedema service for support and advice.
### Appendix 1: Urgent Suspected Gynaecology Cancer Referral Forms

**South West London Referral Form**

<table>
<thead>
<tr>
<th>SOUTH WEST LONDON CANCER NETWORK</th>
<th>Suspected Gynaecological Cancers Referral Form (NICE 2006)</th>
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<tbody>
<tr>
<td><strong>Urgent Referrals Criteria</strong></td>
<td>(Please tick category)</td>
</tr>
<tr>
<td>GY 1 Lesions suspicious of cancer on cervix or vagina on speculum examination</td>
<td>□</td>
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<tr>
<td>GY 2 Lesions suspicious of cancer on clinical examination of the vulva</td>
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</tr>
<tr>
<td>GY 3 Palpable abdominal or pelvic mass (not obviously fibroids)</td>
<td>□</td>
</tr>
<tr>
<td>GY 4 Suspicous pelvic mass on ultrasound</td>
<td>□</td>
</tr>
<tr>
<td>GY 5 Post menopausal bleeding in a woman not on HRT</td>
<td>□</td>
</tr>
<tr>
<td>GY 6 Persistent or unexplained post menopausal bleeding in a woman on HRT, after cessation of the HRT for 6 weeks</td>
<td>□</td>
</tr>
<tr>
<td>GY 7 Post menopausal bleeding in a women taking Tamoxifen</td>
<td>□</td>
</tr>
<tr>
<td>GY 8 Persistent intermenstrual bleeding and a negative pelvic examination</td>
<td>□</td>
</tr>
<tr>
<td>Is this a screening patient?</td>
<td>Yes ☑ No ☐</td>
</tr>
</tbody>
</table>

**Date of GP decision to refer:**

**No. of pages faxed:**

<table>
<thead>
<tr>
<th><strong>GP DETAILS</strong></th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Telephone No:</td>
</tr>
<tr>
<td>Fax. No:</td>
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</table>

<table>
<thead>
<tr>
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</thead>
<tbody>
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<td>Last Name:</td>
</tr>
<tr>
<td>First Name:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Daytime Tel or Mobile:</td>
</tr>
<tr>
<td>Gender: M ☐ F ☑</td>
</tr>
<tr>
<td>Age:</td>
</tr>
<tr>
<td>Interpreter required? Y/N</td>
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<td>Language:</td>
</tr>
<tr>
<td>Ethnicity:</td>
</tr>
<tr>
<td>Hospital No:</td>
</tr>
</tbody>
</table>

**Comments/Other reasons for urgent referral**

### Patient Awareness Questions

1. Has the patient been made aware of the nature of their referral? Yes ☑ No ☐
2. Has the patient been supplied with supportive information about the Urgent Suspected Cancer referral process? Yes ☑ No ☐
3. Have you asked the patient if they would be available to attend an appointment within the next two weeks? Yes ☑ No ☐
4. Has the patient indicated to you that they would be available to attend an appointment within the next two weeks? Yes ☑ No ☐

---

**How to make urgent referrals for suspected gynaecological cancers**

Please FAX this form to the Cancer Office at the relevant hospital, with or without an accompanying letter. You should receive acknowledgement by fax that your referral has been received.

- **Epsom and St Helier NHS Trust**
  - St Helier Hospital
  - Wrythe Lane, Carshalton
  - Surrey SM5 1AA
  - FAX: 020 8296 2741
  - TEL: 020 8296 2742

- **Croydon Health Services NHS Trust**
  - Croydon University Hospital
  - Blackshaw Road, Caterham
  - Surrey CR7 7YE
  - FAX: 020 8401 3327
  - TEL: 020 8401 3986

- **Kingston Hospital NHS Trust**
  - Kingston Hospital
  - Galsworthy Road
  - Kingston KT2 7QB
  - FAX: 020 8934 3306
  - TEL: 020 8934 3305

- **St George’s Healthcare NHS Trust**
  - St George’s Hospital
  - Blackshaw Road, Tooting
  - London SW17 0QT
  - FAX: 020 8725 0778
  - TEL: 020 8725 1111

- **Kingston Hospital NHS Trust**
  - Queen Mary’s Hospital
  - Roehampton Lane
  - London SW15 5PN
  - FAX: 020 8812 7937
  - TEL: 020 8407 8037/6032

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South East London Referral Form

**SOUTH EAST LONDON CANCER NETWORK**

Gynaecology Urgent Suspected Cancer Referral

Please tick the box of the hospital clinic you are referring to and fax this form to the relevant Urgent Referral Team within 24 hours. Guidelines are on the reverse side.

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Fax</th>
<th>Tel</th>
</tr>
</thead>
<tbody>
<tr>
<td>South London Healthcare</td>
<td>01689 866055</td>
<td>01689 865676</td>
</tr>
<tr>
<td>Guy’s &amp; St Thomas’</td>
<td>020 7188 0923</td>
<td>020 7188 0902</td>
</tr>
<tr>
<td>King’s College</td>
<td>020 3299 1515</td>
<td>020 3299 1516</td>
</tr>
<tr>
<td>Lewisham</td>
<td>020 8333 3451</td>
<td>020 8333 3450</td>
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**SECTION 1 – PATIENT INFORMATION. PLEASE COMPLETE IN BLOCK CAPITALS.**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>SURNAME</td>
<td>Patient visited this hospital before? Y / N</td>
</tr>
<tr>
<td>FIRST NAME</td>
<td>NHS Number Hospital Number</td>
</tr>
<tr>
<td>Gender M / F D.O.B.</td>
<td>Patient aware the referral is urgent? Y / N</td>
</tr>
<tr>
<td>Address Post Code</td>
<td>First language Interpreter required? Y / N</td>
</tr>
<tr>
<td>Daytime Telephone</td>
<td>Home Telephone (if different) / Mobile No. Transport required? Y / N</td>
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**SECTION 2 – PRACTICE INFORMATION. USE PRACTICE STAMP IF AVAILABLE.**

<table>
<thead>
<tr>
<th>Field</th>
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</thead>
<tbody>
<tr>
<td>Referring GP</td>
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<td>Practice Address</td>
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<td>Post Code</td>
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**SECTION 3 – CLINICAL INFORMATION. PLEASE TICK THE RELEVANT BOXES.**

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<td>Cancer type suspected</td>
<td>Cervix Endometrium Vagina / Vulva</td>
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<tr>
<td>Menopausal status</td>
<td>Premenopausal Postmenopausal Hysterectomy On HRT</td>
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<tr>
<td>Bleeding PV</td>
<td>Intermenstrual Postcoital Postmenopausal</td>
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<tr>
<td>Number of episodes Duration</td>
<td></td>
</tr>
<tr>
<td>Abdominal symptoms</td>
<td>Yes No</td>
</tr>
<tr>
<td>Examination findings Abdominal mass Pelvic mass Visible cervical lesion Vulval / vaginal lesion Bleeding / ulcerated vulval /vaginal lesion</td>
<td></td>
</tr>
<tr>
<td>Additional information</td>
<td>Attach patient computer record summary if available. Continue on separate sheet if required.</td>
</tr>
</tbody>
</table>
SOUTH EAST LONDON CANCER NETWORK
Information to support Gynaecology referrals

Refer urgently patients:

• With clinical features suggestive of cervical cancer on examination. A smear test is not required before referral, and a previous negative result should not delay referral.
• With an unexplained vulval lump.
• Not on HRT with postmenopausal bleeding.
• On HRT with persistent or unexplained postmenopausal bleeding after cessation of HRT for 6 weeks.
• Taking tamoxifen with postmenopausal bleeding.
• With vulval bleeding due to ulceration.
• With a palpable abdominal or pelvic mass on examination that is not obviously uterine fibroids or not of gastrointestinal or urological origin. Obtain Ca125, Ca199 and CEA markers.

Consider an urgent referral for patients with persistent inter-menstrual bleeding and negative pelvic examination.

Investigations in Primary Care:

A full pelvic examination, including speculum examination of the cervix, is recommended for patients presenting with any of the following:

• alterations in the menstrual cycle
• intermenstrual bleeding
• postcoital bleeding
• postmenopausal bleeding
• vaginal discharge.

Carry out an abdominal palpation, and consider a pelvic examination, in patients with vague, non-specific, unexplained abdominal symptoms such as

• bloating
• constipation
• abdominal pain
• back pain
• urinary symptoms.

In patients with vulval pruritus or pain, a period of ‘treat, watch and wait’ is reasonable. Active follow-up is recommended until symptoms resolve or a diagnosis is confirmed. If symptoms persist, the referral may be urgent or non-urgent, depending on the symptoms and the degree of concern about cancer.

Non-urgent referrals should be made using Choose & Book or a letter.

Patient information and support:

Consider the information and support needs of patients and the people who care for them while they are waiting for the referral appointment. Resources for GPs to use are available from the Cancer Network on 020 7188 7090, or visit our website www.selcn.nhs.uk.

Approved by the South East London Cancer Network in June 2012
For comments or additional copies contact the Network on Tel 020 7188 7090 / Fax 020 7188 7120, or visit our website: www.selcn.nhs.uk
## North West London Referral Form

### URGENT SUSPECTED GYNAECOLOGICAL CANCER REFERRAL FORM

PLEASE ENSURE THAT THIS FORM IS ATTACHED TO YOUR CHOOSE AND BOOK REFERRAL

Hospital to which patient is being referred:

<table>
<thead>
<tr>
<th>Patient details</th>
<th>GP Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS No.</td>
<td>Dr:</td>
</tr>
<tr>
<td>Surname:</td>
<td>Address:</td>
</tr>
<tr>
<td>First Name:</td>
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<td>Address:</td>
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<tr>
<td>Postcode</td>
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<tr>
<td>Tel day:</td>
<td></td>
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<td></td>
<td>Date of decision to refer:</td>
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</tbody>
</table>

**Have you informed the patient that you suspect gynaecological cancer?**  Y / N

**Have you given the patient the 2WW information leaflet**  Y / N

**Has the patient had a previous diagnosis of cancer?**  Y / N (Specify if known)

**Has the patient previously visited this hospital?**  Y / N

**Hospital number (if known):**

**Interpreter required?**  Y / N

### Symptoms and Clinical Findings

<table>
<thead>
<tr>
<th>Suspected Cancer type:</th>
<th>Menopausal status:</th>
<th>Examination findings:</th>
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<tbody>
<tr>
<td>Cervix</td>
<td>□</td>
<td>Postmenopausal □</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>Abdominal mass Yes No</td>
</tr>
<tr>
<td>Ovary</td>
<td>□</td>
<td>Premenopausal □</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>Pelvic mass Yes No</td>
</tr>
<tr>
<td>Endometrium</td>
<td>□</td>
<td>Hysterectomy □</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>Suspicious cervical lesion Yes No</td>
</tr>
<tr>
<td>Vagina / vulva</td>
<td>□</td>
<td>On HRT □</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>Suspicious vulval lesion Yes No</td>
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**Vaginal bleeding:**

<table>
<thead>
<tr>
<th>Number of episodes:</th>
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<tbody>
<tr>
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<td>□</td>
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</tbody>
</table>

**Pelvic ultrasound (please fax copy if available):**

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
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<td></td>
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</tbody>
</table>

**Additional Information: Include any investigations arranged or results obtained and any other information you think is relevant.**

Please ensure this form is received in the Trust within 24 hours of GP decision to refer

Latest version of the form is available at [www.melcn.nhs.uk](http://www.melcn.nhs.uk)

Version 3.8
APPENDIX 1: URGENT SUSPECTED GYNAECOLOGY CANCER REFERRAL FORMS

<table>
<thead>
<tr>
<th>North West London Hospitals NHS Trust</th>
<th>Imperial College Healthcare NHS Trust</th>
<th>Chelsea and Westminster NHS Foundation Trust</th>
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<tbody>
<tr>
<td>Fax: 020 8235 4188</td>
<td>Fax: 020 3312 1580</td>
<td>Fax: 020 3315 8814</td>
</tr>
<tr>
<td>Tel: 020 8235 4293</td>
<td>Tel: 020 3312 1527</td>
<td>Tel: 020 3315 2686</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ealing Hospital NHS Trust</td>
<td>Hillingdon Hospital NHS Trust</td>
<td>West Middlesex University Hospital NHS Trust</td>
</tr>
<tr>
<td>Fax: 020 8967 5005</td>
<td>2WW fax line: 01895 279807</td>
<td>Fax: 020 8321 5157</td>
</tr>
<tr>
<td>Tel: 020 8967 5000, x3921</td>
<td>Tel: 01895 279467</td>
<td>Tel: 020 8321 6776</td>
</tr>
<tr>
<td></td>
<td>Alternate Fax: 01895 279714</td>
<td></td>
</tr>
</tbody>
</table>

GUIDELINES FOR URGENT REFERRAL

- Visible tumour on cervix on speculum examination
- Visible tumour on vulva on clinical examination
- Palpable pelvic mass
- Suspicious pelvic mass on pelvic ultrasound
- More than one or a single heavy episode of postmenopausal bleeding, whether on HRT or not.
- Postcoital bleeding that persists for more than 4 weeks
- HRT: Unexpected or prolonged bleeding

Please ensure this form is received in the Trust within 24 hours of GP decision to refer
Latest version of the form is available at www.nwlcn.nhs.uk
Version 3.8
Appendix 2: LCA Key Worker Policy

Definition

A key worker is a person who, with the patient’s consent and agreement, takes a key role in coordinating the patient’s care and promoting continuity, ensuring the patient knows who to access for information and advice in relation to their cancer diagnosis. In addition, the key worker will facilitate patients making informed decisions about their treatment.

The implementation of the key worker role is a requirement of the National Cancer Peer Review Programme and detailed in the Manual for Cancer Services, originally published by the National Cancer Action Team (NCAT), and related site-specific Improving Outcomes Guidance, issued by the National Institute for Health and Care Excellence (NICE).

Principles and responsibilities

Designation

1. The key worker is a named clinical member of the site-specific multidisciplinary team (MDT), and acts as the point of contact between the patient and MDT.

2. The key worker is a healthcare professional.

3. The key worker is assigned by the core Clinical Nurse Specialist (CNS) of an MDT, agreed by the MDT and recorded within the patient record and multidisciplinary meeting proforma.

4. The name of the key worker, designation and contact details will also be recorded in the patient handheld record (PHR), if used, and included in all correspondence and in the patient medical records. All entries in the medical notes will comply with the NHS Litigation Authority standards.

Access

5. All cancer patients will be made aware of their allocated key worker, but have the right to ask for an alternative if they prefer. This will usually happen at diagnosis.

6. The key worker will provide a contact number to all the patients for whom they act as the key worker.

Multi-professional communication

7. If a more appropriate person is identified as a key worker at a point in the patient’s pathway, this will be discussed and agreed by the patient and the new key worker, and recorded in the patient’s notes. This situation is most likely to arise with referral to the palliative care team. In such cases the palliative care CNS will check if a key worker has already been identified for the patient by the relevant tumour MDT. The palliative care CNS will then negotiate and document care responsibilities in the patient’s notes.

8. The key worker may change as patients pass through various stages of the care trajectory or when care is transferred to a different Trust. It is the responsibility of the key worker to hand over to the next one, to document this in the patient’s notes and to keep the patient informed.
9. The key worker will lead on patient communication issues and coordination of the pathway for patients referred to the team.

10. The key worker will ensure that the patient pathway is coordinated and that all relevant information is transferred to the appropriate professionals as the patient moves across care boundaries, e.g. on admission to and discharge from institutions, when care is transferred between teams.

11. The key worker has responsibility for ensuring holistic needs assessments (HNAs) are recorded/documented in patient records.

**Patient communication and support**

12. Where possible, the key worker will be available to support the patient on diagnosis to signpost and provide them with information and contacts for the MDT, national information and support services, self-help groups and associated site-specific support.

13. If the key worker is not available at the time of diagnosis, the person who is providing support at the time will ensure that the patient is aware of the key worker role and provide the relevant contact details.

14. The key worker will be accessible to the patient as a constant point of contact, handing over to colleagues when unavailable and making sure that the patient has clear information about alternative contacts and cover arrangements.

15. The key worker will provide information, care and support throughout the patient journey regardless of the patient's condition, liaising between health professionals to ensure continuity of care and a seamless service.

**Data/audit**

16. The key worker will contribute to the audit of the key worker role in their organisation.

**Annex A**

**NCAT peer review standard**

There should be an operational policy whereby a single named key worker for the patient’s care at a given time is identified by the MDT members for each individual patient and the name and contact number of the current key worker is recorded in the patient’s case notes. The responsibility for ensuring that the key worker is identified should be that of the nurse MDT member(s).

The above policy should have been implemented for patients who came under the MDT’s care after publication of these measures and who are under their care at the time of the peer review visit.

**Notes**

- According to the NICE supportive and palliative care guidance, a key worker is a person who, with the patient’s consent and agreement, takes a key role in coordinating the patient’s care and promoting continuity, e.g. ensuring that the patient knows who to access for information and advice. This is not intended to have the same connotation as the key worker in social work.

- It may be necessary to agree a single key worker across both a cancer site-specific MDT and the specialist palliative care MDT for certain patients.
Appendix 3: LCA Survivorship Guidelines

As cancer treatments become more effective, more people are living with and beyond cancer with specific needs as a direct result of the cancer and its treatment. The consequences of cancer treatment are dependent on multiple factors and affect each person differently. Consequences may be physical (e.g. cardiovascular conditions, impact on fertility, bone health and gastrointestinal); emotional or psychological (e.g. anxiety, loss of self-confidence and depression); social; spiritual; or cognitive. They can have an impact on every aspect of a person and their family’s lives, from the ability to work, through to the ability to have a family or to participate in social activities. It is widely acknowledged that cancer survivors have a multitude of unmet needs following treatment, with a majority still having some needs 6 months later. Good survivorship care enables the person to live as full and active a life as possible.

Survivorship can be defined as:

“cover[ing] the physical, psychological and economic issues of cancer, from diagnosis until end of life. It focuses on the health and life of a person with cancer beyond the diagnosis and treatment phases. Survivorship includes issues related to the ability to get health care and follow-up treatment, late effects of treatment, second cancer and quality of life. Family members, friends and caregivers are also part of the survivorship experiences.”

National Cancer Institute, Dictionary of Cancer Terms, definition of ‘survivorship’

The National Cancer Survivorship Initiative (NCSI) vision document (Department of Health 2010) mandated five shifts in care for individuals completing cancer treatment. NCSI advocates cancer being treated as a chronic illness, with patients empowered and supported to take an active role in their care. Improving Outcomes: a Strategy for Cancer (Department of Health 2012) states that people living with and beyond a cancer diagnosis should have their full needs addressed to prevent long-term disability, enabling them to live a full, active, good quality life for as long as possible. Work within the NCSI has to date focused on survivorship from the end of treatment, but its report, Living With and Beyond Cancer: Taking Action to Improve Outcomes, acknowledges that survivorship care from the point of diagnosis is also vital.

It challenges services to develop further and focuses on five different areas:

• information and support from diagnosis
• promoting recovery
• sustaining recovery
• managing consequence
• supporting people with active and advanced disease.

The importance of good survivorship care is well known: those who have unmet needs are 20% more likely to visit their GP and twice as likely to attend A&E than age-matched healthy people. They are more likely to be unemployed and many report economic hardship. Much has been achieved both nationally and locally to address this agenda. It is essential that in the LCA our patients have access to high-quality, equitable survivorship services on a par with the best in the country. We will continue to build on the successes to date.
The Consequences of Cancer and its Treatment (CCaT) collaborative group, (a Macmillan Community of Interest) produced a guidance document that includes ‘10 Top tips’ for patients. These cover the key components of good survivorship care, and LCA expects services to address these areas. The following nine points for professionals are based on the CCaT’s work

1. **Discuss a person’s needs**

The holistic needs assessment (HNA) has been shown to be effective in identifying a person’s areas of concern. The tool allows patients to specify what is of most concern to them, and so directs subsequent discussion and intervention to addressing these needs (see Appendix 6).

2. **Provide a treatment summary and care plan**

These are two related but distinct documents.

A treatment summary provides a summary of the cancer treatments received by the end of first treatment, planned follow-ups (including mechanisms for these) and signs and symptoms of which to be aware. The aim is to provide information not only to the patient but also to the GP about possible consequences of cancer and its treatment, signs of recurrence and other important information.

A care plan is generated as a result of an HNA and is the agreed plan between the patient and healthcare professional about how the identified areas of concern will be addressed. This may cover provision of information (e.g. through an information prescription), onward referral for specialist assessment and intervention (e.g. breathlessness management), or things which the patient themselves can do (e.g. contact their HR department about a graduated return to work options).

**Recommendation:** An end of treatment consultation should be offered to every patient. This should include an end of treatment HNA and associated written care plan, and should also include the discussion and provision of a comprehensive treatment summary.

3. **Provide a main contact**

Several pieces of UK-wide work have shown the necessity of a key contact, or key worker, not least the national Cancer Patient Experience Survey. It is now agreed that both patients and GPs (and other healthcare professionals) benefit from having a named person to contact if they need help or advice about issues related to the consequences of cancer and its treatment.

**Recommendation:** The treatment summary should include the details of a key worker in addition to details of who to contact out of hours. This should be sent to the GP, the patient and any others the patient identifies as necessary.

4. **Identify post-treatment symptoms**

As discussed above, cancer and its treatments can have far-reaching consequences and people with associated unmet needs are more likely to access healthcare services than their healthy counterparts. Providing information on likely post-treatment symptoms (e.g. early lymphoedema or faecal incontinence) and how these can be managed or avoided, allows people to seek the right help from the right people at the right time.
Recommendation: Information on anticipated or possible consequences of cancer treatment and what to do if they occur should be routinely provided to all patients. This should be done from the time of discussion of treatment onwards, with the information clearly reiterated during the end of treatment consultation.

5. Provide support about day-to-day concerns

Life changes following a cancer diagnosis. It is recognised that people need help and support to find a ‘new normal’. This may cover any one of a multitude of aspects, from work and education, through to financial worries and needing help with caring responsibilities. Help should be offered at all key points in the pathway, but may be of particular relevance at the end of treatment and may well be highlighted in the HNA. There are various options for written information provision (e.g. Macmillan Cancer Support information leaflets and information prescriptions) as well as some specialist services (e.g. Citizens Advice). Reports published by the NCSI, available on the NCSI website, may be of use to professionals.

Recommendation: Patients should be routinely asked about whether they need support with day-to-day issues and referrals made to specialist services when necessary.

6. Talk about how you feel

Having a cancer diagnosis has an emotional impact, and at the end of treatment people experience a wide range of emotions. Sometimes, these can be dealt with by the person alone or with support from the key worker and others, but some people will need referral to psychological support services. This may be true for not only patients but their family and carers too.

Recommendation: Use an HNA to identify emotional concerns. Further screening tools (e.g. the Hospital Anxiety and Depression Scale) should be considered, with subsequent referrals made as necessary.

7. Healthy lifestyle

There is a growing body of evidence which supports the adoption of a healthy lifestyle for those who have had a cancer diagnosis.

7.1 Smoking cessation

Tobacco smoking is the main cause of preventable morbidity and premature death in England. End of treatment provides an opportunity to deliver stop smoking interventions at a point at which an individual may be more susceptible to health advice and hence more motivated to quit.

Recommendation: All current smokers should be asked about their smoking habit and offered smoking cessation advice with onward referral to local services as necessary.

7.2 Diet

The role that diet can play in cancer incidence has been widely documented. Research has now moved to look at its influence beyond treatment. The nutritional issues during or following treatment include weight loss or gain; changes in body composition (e.g. loss of muscle mass); particular eating difficulties (e.g. swallowing problems and limited capacity for food). There are also long-term symptoms (e.g. changes in bowel habits for those who have had pelvic radiotherapy).
Receiving advice from an appropriately trained professional has been shown to improve quality of life, reduce risk of recurrence and risk of developing a new primary or other chronic disease, such as heart disease or diabetes. The aim of dietary advice is also to counter the adverse effects of cancer treatment. To date, most of the work has been done in breast, colorectal and prostate cancer. The World Cancer Research Fund (2007) recommends the following for all cancer survivors:

1. Be as lean as possible within the normal body weight range.
2. Be physically active as part of everyday life.
3. Avoid sugary drinks and limit the consumption of energy-dense foods.
4. Eat mostly foods of plant origin.
5. Limit intake of red meat and avoid processed meat.
7. Limit consumption of salt. Avoid mouldy cereals or pulses.
8. Aim to meet nutritional needs by diet alone.

**Recommendation:** Patients are provided with dietary advice, based on the WCRF recommendations at the end of treatment, with referral to specialist dietitians as required.

### 7.3 Physical activity

There has been a dramatic rise in the amount of high-quality published research on the role of exercise in cancer in recent years. Physical activity results in improvement in quality of life, fitness and function and symptoms related to cancer and its treatments. It reduces cancer recurrence, incidence of second cancers and reduces both all-cause and cancer-specific mortality.

There is wide consensus that cancer survivors should exercise to the same level as the general population for health benefits. Research suggests that a combination of cardiovascular and muscular strength training has an important additional benefits over undertaking only one type of exercise.

**Recommendations:** Patients should be encouraged to maintain or increase their level of physical activity both during and after treatment in line with national guidance. They should be referred for specialist assessment by a physiotherapist as necessary. Patients should also be offered access to a health promotion event, such as a health and wellbeing clinic, at the end of treatment.

In addition to general physical activity advice, pelvic floor exercises should routinely be prescribed following catheter removal.

### 8. Self-managed follow-up

There is a move towards increased self-management and follow-up closer to home. This has clear benefits to patients, including reduced anxiety in the lead-up to routine appointments and less interference in their day-to-day life caused by travelling to hospitals. In addition, research has shown that recurrence is more likely to be detected by the patient themselves between appointments, rather than at the outpatient appointment. By reducing unnecessary appointments, Trusts are able to see new patients more quickly and spend more time with more complex patients.
For self-management to be effective, patients need to be given the right information about signs and symptoms of recurrence and clear pathways to follow if they have concerns. They should also be guaranteed a fast, explicit route to re-access services if necessary. A telephone helpline is suggested, which should be staffed by senior, experienced staff.

**Recommendation:** In addition to the use of treatment summaries (as described above), services should investigate the feasibility of rolling out risk-stratified follow-up within their own areas.

9. **Encourage survivors to share their experience**

Sharing the experience of living with and beyond cancer can be beneficial to the patients themselves, their carers and others who have a cancer experience. Providing feedback on experience, volunteering and participation in research can all have a positive impact on the patient.

**Recommendation:** Patients should be offered information on local support groups and where they can access further information on sharing their experiences.

**References**


Appendix 4: Treatment of Children

Children below the age of 16 years with a diagnosis of cancer or suspected cancer must be referred to the paediatric oncology team at the principal treatment centre (PTC) and must not be managed exclusively by adult site-specific teams.

- The joint PTC for children aged 1–16 years for South Thames is The Royal Marsden Hospital (Surrey site)/St George’s Hospital.
- The PTC for North Thames (including North West London) is Great Ormond Street Hospital/University College London Hospitals.
- All patients <1 year should be referred to Great Ormond Street Hospital.

For certain tumour types that are uncommon in children (e.g. skin, melanoma, head and neck, thyroid, gastrointestinal, hepatobiliary), the paediatric oncology team should liaise with the appropriate site-specific multidisciplinary team for advice about management and to agree surgical interventions, but overall responsibility for managing the patient remains with the paediatric oncology team.

Please see below for contact details for the children’s PTCs.

### South Thames PCT contacts

| The Royal Marsden NHS Foundation Trust | Lead Clinician – Dr Julia Chisholm  
[link to email] julia.chisholm@rmh.nhs.uk  
020 8661 3549  
Paediatric oncology oncall registrar (new referrals)  
020 8915 6248 (24h line) |

### North Thames PCT contacts

| Great Ormond Street Hospital  
(patients aged <13 years) | Lead Clinician – Darren Hargrave  
[link to email] darren.hargrave@nhs.net |
| University College London Hospitals  
(patients aged >13 years) | Lead Clinician – Dr Sara Stoneham  
[link to email] sara.stoneham@uclh.nhs.uk  
0203 447 9950 |
Appendix 5: Treatment of Teenagers and Young Adults

The *Improving Outcomes in Children and Young People with Cancer* (NICE, 2005) and the subsequent *Manual for Cancer Services: Teenage and Young Adults Measures* (Department of Health, 2013) recommend that patients aged 16–18 are managed at a principal treatment centre (PTC) for teenager and young adult (TYA) cancers and that those aged 19–24 are given the choice of being managed at a PTC or TYA designated hospital.

- The PTC for TYA for South Thames is The Royal Marsden (Sutton).
- The PTC for North Thames (including North West London) is University College London Hospitals.

All patients within this age range, regardless of place of care, should be referred to the TYA multidisciplinary team (MDT) at the relevant PTC. Referral to the MDT should be made using the TYA referral form (see below) which can be found on the London Cancer Alliance website: http://www.londoncanceralliance.nhs.uk/media/68982/TYA%20MDT%20proforma%20March%202014.doc

Discussion at the TYA MDT is in addition to the site-specific MDT (SSMDT); key functions of the TYA MDT are to agree the treatment plan of the SSMDT, ensure cancer registration and provide a psychosocial care plan. Members of the SSMDT or TYA service at the PTC or TYA designated hospitals are invited to attend the TYA MDT either remotely or in person.

### South Thames PTC contacts

<table>
<thead>
<tr>
<th>The Royal Marsden NHS Foundation Trust</th>
<th>Lead Clinician – Dr Julia Chisholm <a href="mailto:julia.chisholm@rmh.nhs.uk">julia.chisholm@rmh.nhs.uk</a></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TCT Nurse Consultant for Adolescents and Young Adults – Louise Soanes <a href="mailto:isoanes@nhs.net">isoanes@nhs.net</a></td>
</tr>
</tbody>
</table>

### London Cancer Alliance TYA designated centres contacts allied to The Royal Marsden PTC

<table>
<thead>
<tr>
<th>Joint Centre (Guy’s and St Thomas’ NHS Foundation Trust/King’s College Hospital NHS Foundation Trust)</th>
<th>Guy’s and St Thomas’</th>
<th>Lead Clinician – Dr Robert Carr <a href="mailto:Robert.carr@gstt.nhs.uk">Robert.carr@gstt.nhs.uk</a></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lead Nurse – Gavin Maynard-Wyatt <a href="mailto:Gavin.maynard-wyatt@gstt.nhs.uk">Gavin.maynard-wyatt@gstt.nhs.uk</a></td>
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</table>

<table>
<thead>
<tr>
<th>Joint Centre (Guy’s and St Thomas’ NHS Foundation Trust/ King’s College Hospital NHS Foundation Trust)</th>
<th>King’s College Hospital</th>
<th>Lead Clinician – Dr Donal McLornan <a href="mailto:donal.mclornan@nhs.net">donal.mclornan@nhs.net</a></th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Lead Nurse – Gavin Maynard-Wyatt <a href="mailto:Gavin.maynard-wyatt@gstt.nhs.uk">Gavin.maynard-wyatt@gstt.nhs.uk</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>St George’s Healthcare NHS Trust</th>
<th>St George’s Hospital</th>
<th>Lead Clinician – Dr Jens Samol <a href="mailto:jens.samol@stgeorges.nhs.uk">jens.samol@stgeorges.nhs.uk</a></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lead Nurse – Linda Shephard <a href="mailto:Linda.shephard@stgeorges.nhs.uk">Linda.shephard@stgeorges.nhs.uk</a></td>
</tr>
</tbody>
</table>
### North Thames PTC contacts

<table>
<thead>
<tr>
<th>University College London Hospitals</th>
<th>Lead Clinician – Dr Rachael Hough <a href="mailto:Rachael.hough@uclh.nhs.uk">Rachael.hough@uclh.nhs.uk</a> TCT Nurse Consultant for Teenagers and Young Adults – Wendy King <a href="mailto:wendy.king@uclh.nhs.uk">wendy.king@uclh.nhs.uk</a></th>
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</table>

### London Cancer Alliance TYA designated centres contacts allied to University College London Hospitals PTC

<table>
<thead>
<tr>
<th>Chelsea and Westminster Hospital NHS Foundation Trust</th>
<th>Chelsea and Westminster (HIV and skin only)</th>
<th>Lead clinician – Dr Mark Bower (interim) <a href="mailto:Mark.Bower@chelwest.nhs.uk">Mark.Bower@chelwest.nhs.uk</a> Lead Nurse – Kate Shaw (interim) <a href="mailto:Kate.Shaw@chelwest.nhs.uk">Kate.Shaw@chelwest.nhs.uk</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial College Healthcare NHS Trust</td>
<td>Charing Cross</td>
<td>Lead Clinician – Dr Josu de la Fuente (deputy) <a href="mailto:j.delafuente@imperial.ac.uk">j.delafuente@imperial.ac.uk</a> Lead Nurse – Sinead Cope <a href="mailto:sinead.cope@imperial.nhs.uk">sinead.cope@imperial.nhs.uk</a></td>
</tr>
<tr>
<td>East and North Hertfordshire NHS Trust</td>
<td>Mount Vernon Cancer Centre</td>
<td>Lead Clinician – Dr Gordon Rustin <a href="mailto:grustin@nhs.net">grustin@nhs.net</a> Lead Nurse – Laura Miles <a href="mailto:laura.miles@nhs.net">laura.miles@nhs.net</a></td>
</tr>
</tbody>
</table>
External referrals to The Royal Marsden TYA MDT: please complete section A and provide copies of site-specific MDT outcome sheet and original pathology report. We are unable to register patient on the TYAC database without this information.

### Section A: Patient details

<table>
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<tr>
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<th>DOB/Age:</th>
<th>Sex:</th>
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<td>Ethnic origin:</td>
<td>Country of birth:</td>
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<tr>
<td>Referring hospital:</td>
<td>NHS no:</td>
<td>RMH no:</td>
</tr>
<tr>
<td>History &amp; diagnosis:</td>
<td>Staging:</td>
<td></td>
</tr>
<tr>
<td>Treatment/protocol:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referring consultant name and specialty:</td>
<td>Name of key worker at referring hospital:</td>
<td></td>
</tr>
</tbody>
</table>

**Discussed in site specific MDT?:** Yes / No **Details:**

**Reason for referral to RM TYA MDT:**
- ☐ New case
- ☐ Relapse
- ☐ Progression
- ☐ On treatment
- ☐ Off treatment

**Patient aware of diagnosis?:** Yes / No

**Patient aware of referral to TYA MDT?:** Yes / No

### Section B: Record of RMH TYA MDT discussion

<table>
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<tr>
<th>Date of TYA MDT:</th>
</tr>
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<tbody>
<tr>
<td>Place of care:</td>
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<tr>
<td>Named consultant at RMH (if relevant):</td>
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<tr>
<td>Named key worker at RMH (if relevant):</td>
</tr>
<tr>
<td>TYA Designated Hospital / Shared care hospital:</td>
</tr>
</tbody>
</table>

**Family / social circumstances:**

**Education / work:**

**Psychosocial issues:**

**Site-specific MDT treatment plan accepted by TYA MDT?:** Yes / No

**Clinical trial:**
- ☐ yes, on trial
- ☐ trial available but NOT on trial; specify why
- ☐ no relevant trial

**Physician decision**
- ☐ Patient/parent decision
- ☐ Not eligible
- ☐ Other (specify) ☐

**Fertility preservation discussed:** Yes / No / Information not supplied / Not relevant

**Action points arising from TYA MDT:**

**TYA MDT discussion documented by:**
 Appendix 6: Community Specialist Palliative Care Referral Form

### Specialist Palliative Care (SPC) Community and SPC Inpatient Unit Referral Form

| Specialist Palliative Care Community Teams & Inpatient Units across South & West London |
|---|---|---|
| Greenwich & Bexley Community Hospice | Lewisham Macmillan Community Team | St Christopher's Hospice |
| Bostall Hill, Abbey Wood SE2 0GB | Lewisham High Street SE13 6LH | Lawrie Park Rd, London SE26 6DZ |
| Home care: Tel: 020 83205837 Fax: 020 83205839 Admissions: Tel: 020 8312244 Fax: 020 83124344 | Tel: 020 8333 3017 Fax: 020 8333 3270 | Home care: Tel: 020 8776 5656 Fax: 020 87765798 Admissions: Tel: 020 87684582 Fax: 02086505051 St Christopher's Bromley Tel: 01689 825755 Fax: 01689 892999 |
| Harlington Hospice | Meadow House Hospice | St John's Hospice |
| St Peter's Way, Harlington UB3 5AB | Southall UB1 3HW | Grove End Road, St John's Wood NW8 9NH |
| Tel: 020 87590453 Fax: 020 87590600 | Tel: 020 89675179 Fax: 020 89675756 | Tel: 020 78064040 Fax: 020 78064041 |
| Harrow Community Team | Michael Sobell House | St Luke's Hospice |
| Kenton Road, Harrow HA3 0YG | Northwood, Middlesex HA6 2RN | Kenton Road, Harrow HA3 0YH |
| Tel: 020 83828084 Fax: 020 83828085 | Tel:01923 844531 Fax:01923 844565 | Tel: 020 83828001 Fax: 020 83828080 |
| Hillingdon Community Team | Pembroke Palliative Care Centre | St Raphael's Hospice |
| Pield Heath Road, Uxbridge UB8 3NN | Exmoor Street, W10 6DZ | London Road, North Cheam SM3 9DX |
| Tel:01895 279412 Fax:01895 279452 | Inpatient Fax: 020 89624410 Community Services Fax: 020 89624413 | Tel: 020 80997777 Fax: 020 8099 1724 |
| Trinity Hospice | Princess Alice Hospice | Chipham Common SW4 0RN |
| West End Lane, Esher KT10 8NA | Tel: 01372 461804 Fax: 01372 470937 | Tel: 020 7787 1000 Ref & Admissions Nurse: 020 77871065 Fax: 020 7787 1067 |

For further information and advice on these services, please visit the Help the Hospices service directory at: [http://www.helpethospices.org.uk/about-hospice-care/find-a-hospice/uk-hospice-and-palliative-care-services/](http://www.helpethospices.org.uk/about-hospice-care/find-a-hospice/uk-hospice-and-palliative-care-services/) and enter the postcode provided above.

Every LCA hospital has a Specialist Palliative Care team; if your patient is a hospital inpatient, please contact the team, via the relevant hospital switchboard.

### FAX MESSAGE

<table>
<thead>
<tr>
<th>From:</th>
<th>To:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax No:</td>
<td>Date:</td>
</tr>
<tr>
<td>No. of pages (incl cover sheet):</td>
<td></td>
</tr>
<tr>
<td>Additional information</td>
<td></td>
</tr>
</tbody>
</table>

Confidentiality: The content of this fax and attached documents are confidential and intended for the use of the addressee designated above. If you are not the addressee, you are hereby notified that you may not disclose, reproduce or otherwise disseminate or make use of this information for your or any third party. If you have received this in error, please notify us on the telephone number given above.

**PLEASE SEND COPIES OF RECENT CLINICAL CORRESPONDENCE WITH THIS FORM — including recent clinic letters, blood tests and most recent imaging. NB. INSUFFICIENT INFORMATION MAY DELAY PATIENT ASSESSMENT**

**PATIENT NAME** .......................................................................................................................................................... **NHS No:** ..........................................................................................................................................................

LCA Palliative Care Group Revised April 2014
## LCA GYNAECOLOGICAL CANCER CLINICAL GUIDELINES

### Referral Form for SPC Community and Inpatient Units (2/3)

**Essential Patient Details**
- **Surname**
- **Male/Female**
- **Age**
- **Patient consent to palliative care involvement?** Yes ☐ No ☐
- **First Name**
- **DoB**
- **Is GP aware of referral?** Yes ☐ No ☐
- **Address**
- **Postcode**
- **Marital Status**
- **Ethnicity**
- **Tel**
- **Mob**
- **NHS number**
- **Hospital No.**

**Primary diagnosis(ies)**

**Communication**
- **Frequent in English?** Yes ☐ No ☐ (If 'No' proceed with remaining questions)
- **First Language, if not English?**
- **Would interpreter be helpful to patient and Palliative Care staff?** Yes ☐ No ☐

**Next of Kin/Patient Representatives**
- **District Nurse** Yes ☐ No ☐
- **General Practitioner**
- **Name**
- **Address**
- **Telephone**
- **Relationship to patient**
- **Social Services** Yes ☐ No ☐
- **Name**
- **Telephone**
- **Relationship to patient**
- **FCG**

**Reason for Referral**
- **Pain/symptom control**
- **Emotional/psychological support**
- **Social/Financial**
- **Assessment for hospital admission**
- **Care support**
- **Other reason (please give details below)**
- **Continuing care assessment completed:** Yes ☐ No ☐
- **Continuing care funding agreed:** Yes ☐ No ☐

**Service requested**
- **Home assessment and support**
- **Hospital assessment**
- **Day Care**
- **Outpatient service**
- **Admission (circle)**
- **Respite / symptom control / terminal care**
- **Hospital at Home**

**The patient is currently**
- **At Home**
- **In Hospital**
- **Other e.g. Nursing Home**
- **Please specify**
- **Does patient live alone?** Yes ☐ No ☐

**Any access issues (e.g. key safe):**
- **MRSA States**
- **Positive ☐ Negative ☐ Not known ☐**
- **Any other communicable infection:**

**Special device in situ?** Yes ☐ No ☐ If yes, give details (e.g. trache / PEG / ICD / NIPPV):

**Referrer's Name (please print)**

**Contact number**

**Hospital/Surgery:**

This information required on both pages if faxing

**IS REFERRAL URGENT (assess within 2 working days)?** Yes ☐ No ☐

*IF URGENT, PLEASE PHONE US FOR IMMEDIATE ADVICE*

---

LCA Palliative Care Group Revised April 2014
Referral Form for SPC Community and Inpatient Units  (3/3)

<table>
<thead>
<tr>
<th>In-Patient details</th>
<th>Patient Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>NHS no:</td>
</tr>
<tr>
<td>Ward</td>
<td>Telephone</td>
</tr>
<tr>
<td>Key worker</td>
<td>Date of discharge (if known)</td>
</tr>
<tr>
<td>Consultant</td>
<td>Is Palliative Care team involved? Yes □ No □</td>
</tr>
</tbody>
</table>

Brief History of diagnosis(es) and Key treatments

<table>
<thead>
<tr>
<th>Date</th>
<th>Progression of disease and investigations/treatment</th>
<th>Consultant and hospital</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Current palliative care problems

1. 
2. 
3. 
4. 
5. 
6. 

Patient Mobility: Bedside/Nursing required? Yes □ No □

Any other comments/information (including preferences expressed about care or other psychosocial or spiritual issues)

Referrer's expectation of current treatment (please circle) symptom control / life prolonging / curative

Prognosis: In your opinion, is the patient

Stable? Yes □ No □ Unstable? Yes □ No □ Deteriorating? Yes □ No □ Dying? Yes □ No □

Is death anticipated within: Months □ Weeks □ Days □

Patient on Coordinate My Care? Yes □ No □ Unknown □

On the GSF register? Yes □ No □ Unknown □

DNA/DCPR in place? Yes □ No □

Past Medical and Psychiatric History

Current Medication

Known Drug Sensitivities/Allergies:

Yes □ No □

Details:

Insight: Has patient been told diagnosis? Yes □ No □

Is the carer aware of patient's diagnosis? Yes □ No □

Does patient discuss the illness freely? Yes □ No □

Please ensure patients are aware information will be held on computer according to the Data Protection Act.

Referrer's signature: 

Name: (please print)

Job title: 

Contact number: 

Bleep no: 

Surgery or Hospital: 

Date: 

LCA Palliative Care Group Revised April 2014
Appendix 7: LCA Holistic Needs Assessment Tool

London Holistic Needs Assessment

For each item below, please tick yes or no if they have been a concern for you during the last week, including today. Please also tick discuss if you wish to speak about it with your health professional.

Choose not to complete the assessment today by ticking this box ☐

<table>
<thead>
<tr>
<th>Date:</th>
<th>Practical concerns</th>
<th>Yes</th>
<th>No</th>
<th>Physical concerns</th>
<th>Yes</th>
<th>No</th>
<th>Discuss</th>
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<tbody>
<tr>
<td>Name:</td>
<td>Caring responsibilities</td>
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<td>☐</td>
<td>High temperature</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Hospital/NHS number:</td>
<td>Housing or finances</td>
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<td>☐</td>
<td>Wound care</td>
<td>☐</td>
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<tr>
<td></td>
<td>Transport or parking</td>
<td>☐</td>
<td>☐</td>
<td>Passing urine</td>
<td>☐</td>
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<tr>
<td></td>
<td>Work or education</td>
<td>☐</td>
<td>☐</td>
<td>Constipation or diarrhoea</td>
<td>☐</td>
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<tr>
<td></td>
<td>Information needs</td>
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<td>☐</td>
<td>Indigestion</td>
<td>☐</td>
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<tr>
<td></td>
<td>Difficulty making plans</td>
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<td>Nausea and/or vomiting</td>
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<tr>
<td></td>
<td>Grocery shopping</td>
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<tr>
<td></td>
<td>Preparing food</td>
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<td>☐</td>
<td>Changes in weight</td>
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<tr>
<td></td>
<td>Bathing or dressing</td>
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<td>☐</td>
<td>Eating or appetite</td>
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<td></td>
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<td>Family concerns</td>
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<td>Sore or dry mouth</td>
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<td></td>
<td>Relationship with children</td>
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<td>Feeling swollen</td>
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<td>Pain</td>
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<td>Emotional concerns</td>
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<td>☐</td>
<td>Dry, itchy or sore skin</td>
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<tr>
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<td>Loneliness or isolation</td>
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<td>☐</td>
<td>Tingling in hands or feet</td>
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<td>Hot flushes</td>
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<tr>
<td></td>
<td>Worry, fear or anxiety</td>
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<td>Moving around or walking</td>
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<td>Sleep problems</td>
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<td>☐</td>
<td>Communication</td>
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<td>Personal appearance</td>
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<td>☐</td>
<td>☐</td>
<td>Other medical condition</td>
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</tbody>
</table>

For health professional use

Date of diagnosis: | Regret about the past | ☐ | ☐ | ☐ |
| Diagnosis: | Loss of faith or other spiritual concern | ☐ | ☐ | ☐ |
| Pathway point: | Loss of meaning or purpose in life | ☐ | ☐ | ☐ |

Care Plan

During my holistic needs assessment, these issues were identified and discussed:

<table>
<thead>
<tr>
<th>Number</th>
<th>Issue</th>
<th>Summary of discussion</th>
<th>Actions required (by name and date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Breathlessness</td>
<td>Possible causes identified Coping strategies discussed Printed information provided</td>
<td>Referral to anxiety management programme; CNS to complete by 24th Dec</td>
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<td>4</td>
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</tbody>
</table>

Other actions/outcomes e.g. additional information given, health promotion, smoking cessation, ‘My actions’:

Signed (patient): Date: 
Signed (healthcare professional): Date: 

For health professional use

Date of diagnosis: 
Pathway point:
Acknowledgements

Our thanks to the following people who have provided input into the LCA Gynaecological Cancer Clinical Guidelines.

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Susana Banerjee, Consultant in Medical Oncology, The Royal Marsden NHS Foundation Trust
Des Barton, Consultant Gynaecological Oncology, St George’s Healthcare NHS Trust/The Royal Marsden NHS Foundation Trust
Jane Bridges, Consultant Gynaecologist, Chelsea and Westminster NHS Foundation Trust
Guiseppe Culora, Consultant Pathologist, Guy’s and St Thomas’ NHS Foundation Trust
Michael Davis, Consultant Gynaecologist, Kingston Hospitals NHS Trust
Roberto Dina, Consultant Pathologist, Imperial College Healthcare NHS Trust
Alan Farthing, Consultant in Gynaecological Oncology, Imperial College Healthcare NHS Trust
Andrea Fernandes, Clinical Nurse Specialist, The Royal Marsden Hospital NHS Foundation Trust
Sadaf Ghaem-Maghami, Consultant in Gynaecology Oncology, Imperial College Healthcare NHS Trust
Kate Haire, Consultant in Public Health Medicine, London Cancer Alliance
Marcia Hall, Consultant in Medical Oncology, Mount Vernon Cancer Centre
Peter Hoskin, Consultant in Clinical Oncology, Mount Vernon Cancer Centre
Geoff Lane, Consultant in Gynaecological Oncology, Guy’s and St Thomas’ NHS Foundation Trust
Emma Mathurine, Clinical Nurse Specialist, Chelsea and Westminster NHS Foundation Trust
Vinod Mullassery, Consultant in Clinical Oncology, Guy’s and St Thomas’ NHS Foundation Trust
Rahul Nath, Consultant Gynaecology Oncology, Guy’s and St Thomas’ NHS Foundation Trust
Nick Nicholas, Consultant Gynaecologist, The Hillingdon Hospital NHS Foundation Trust
Louise O’Connor, Clinical Nurse Specialist, The Royal Marsden NHS Foundation Trust
Ed Park, Consultant in Clinical Oncology, Imperial College Healthcare NHS Trust
Andrea Rockall, Consultant Radiologist, Imperial College Healthcare NHS Trust
Panos Sarhanis, Consultant Gynaecologist, North West London Hospitals NHS Trust
Marie Shannon, Clinical Nurse Specialist, Guy’s and St Thomas’ NHS Foundation Trust
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