The Royal College of Pathologists
Pathology: the science behind the cure

Standards and datasets for reporting cancers

Dataset for histopathological reporting of carcinomas and borderline tumours of the ovaries, fallopian tubes and peritoneum

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Authors: Dr Katherine Vroobel, the Royal Marsden NHS Foundation Trust
Dr Jason Wong, Norfolk and Norwich University Hospital
Dr Rupali Arora, University College London NHS Trust

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Produced by	Dr Katherine Vroobel and Dr Rupali Arora are specialist gynaecological pathologists and have published widely in this field. Dr Jason Wong is the President of the British Association of Gynaecological Pathologists and former organiser of the UK National Gynaecological Pathology EQA scheme.
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	2025. Responses and authors' comments will be available to view at www.rcpath.org/profession/publications/documents-in-development.html **Dr Brian Rous and Sarah Davies** **Clinical Leads for Guideline Adjudication**

The Royal College of Pathologists
6 Alie Street, London E1 8QT
Tel: 020 7451 6700
Fax: 020 7451 6701
Web: www.rcpath.org

Registered charity in England and Wales, no. 261035

Contents

Foreword

The cancer datasets published by the Royal College of Pathologists (RCPath) are a combination of textual guidance, educational information and reporting proformas. The datasets enable pathologists to grade and stage cancers in an accurate, consistent manner in compliance with international standards and provide prognostic information, thereby allowing clinicians to provide a high standard of care for patients and appropriate management for specific clinical circumstances. We recognise that guidelines cannot anticipate every pathological specimen type and clinical scenario. Occasional variations from the practice recommended in this guideline may therefore be required to report a specimen in a way that maximises benefit to the patient.

Each dataset contains core data items (see Appendices D–G) that are mandated for inclusion in the Cancer Outcomes and Services Dataset (COSD – previously the National Cancer Dataset) in England. Core data items are items that are supported by robust published evidence and are required for cancer staging, optimal patient management and prognosis. It is recommended that at least 95% of reports on cancer resections should record a full set of core data items. Other non-core data items are described. These may be included to provide a comprehensive report or to meet local clinical or research requirements. All data items should be clearly defined to allow the unambiguous recording of data.

The following stakeholders will be contacted to consult on this document:

- Working Group of the British Association of Gynaecological Pathologists (BAGP), comprising BAGP Council and co-opted members
- British Gynaecological Cancer Society (BGCS)
- International Collaboration on Cancer Reporting (ICCR).

The information used to develop this dataset was obtained by undertaking a systematic search of the PubMed database. Key terms searched included ‘ovary’, ‘fallopian tube’, ‘carcinoma’ and ‘borderline tumour’ and dates searched were between July 2018 and February 2024. Published evidence was evaluated using modified SIGN guidance (see Appendix H). Consensus of evidence in the guideline was achieved by expert review. Gaps in the evidence were identified by College members via feedback received during consultation.

No major organisational changes or cost implications have been identified that would hinder the implementation of the dataset.

A formal revision cycle for all cancer datasets takes place on a 3-yearly basis. However, each year, the College will ask the authors of the dataset, in conjunction with the relevant subspecialty adviser to the College, to consider whether the dataset needs to be revised. A full consultation process will be undertaken if major revisions are required, i.e. revisions to core data items (the only exception being changes to international tumour grading and staging schemes that have been approved by the Specialty Advisory Committee on Cellular Pathology and affiliated professional bodies; these changes will be implemented without further consultation). If minor revisions or changes to non-core data items are required, an abridged consultation process will be undertaken, whereby a short note of the proposed changes will be placed on the College website for 2 weeks for Fellows' attention. If members do not object to the changes, the short notice of change will be incorporated into the dataset and the full revised version (incorporating the changes) will replace the existing version on the College website.

The dataset has been reviewed by the Professional Guidelines team, Working Group on Cancer Services and Lay Advisory Group. It was placed on the College website for consultation with the membership from 18 August to 15 September 2025. All comments received from the Working Group and membership were addressed by the author to the satisfaction of the Chair of the Working Group and the Clinical Lead for Guideline Review.

This dataset was developed without external funding to the writing group. The College requires the authors of datasets to provide a list of potential conflicts of interest; these are monitored by the Professional Guidelines team and are available on request. The authors have declared no conflicts of interest.

1 Introduction

This document provides the dataset for the histopathological reporting of primary neoplasms of the ovaries, fallopian tubes and peritoneum in resection specimens, and replaces the previous versions of the dataset.

This dataset has been modified from the previous 2019 version, taking into account the 2022 ICCR dataset.[1] It is hoped that regular application of the dataset will allow consistency of reporting of these tumours for accurate staging, treatment and inclusion criteria for clinical trials. The scope of this dataset is to focus on borderline and malignant

epithelial tumours of the ovary, fallopian tube and peritoneum. Guidance for assignation of primary site of origin is provided in line with recent publications and the ICCR dataset. The previous dataset proposed a scheme for scoring the response to neoadjuvant chemotherapy; this has now been adopted around the UK to give a reproducible and comparable 3-tier system for response assessment. Most gynaecological oncologists use the International Federation of Gynecology and Obstetrics (FIGO) staging system for gynaecological cancers. However, Tumour, Node, Metastasis (TNM) staging is included in this dataset to allow standardisation of staging across all cancer sites. Depending on local protocols, clinicians may elect to include TNM staging in gynaecological cancer datasets. The 8th edition of the TNM Classification of Malignant Tumours from the Union for International Cancer Control came into effect on 1 January 2018 and should be used for TNM staging.[2] It is also now recommended that the histological subtype of ovarian cancer be designated at staging.[3]

Ovarian carcinoma is not a single disease but comprises 5 major histological subtypes. Of these, high-grade serous carcinoma (HGSC) is the most common, accounting for >75%, the others being low-grade serous carcinoma, endometrioid carcinoma, clear cell carcinoma and mucinous carcinoma.[4] These 5 major subtypes differ in their epidemiological risk factors, molecular genetics, morphology, immunophenotype, behaviour and response to treatment.[5,6] Minor histological subtypes include malignant Brenner tumour, undifferentiated carcinoma, carcinosarcoma and mesonephric-like adenocarcinoma, which is being introduced into this dataset following its inclusion in the 2020 World Health Organization (WHO) Classification of Female Genital Tumours.[7]

This dataset should be completed for each borderline or malignant epithelial tumour of ovarian, tubal or peritoneal origin. Its use is advocated in the context of the multidisciplinary team meeting (MDTM) as an adjunct to clinical decision-making relevant to the treatment of each individual patient. The final staging should be allocated to each patient at the MDTM when all the available information is accessible.

The completion of the dataset will also facilitate regular audit and review of all aspects of the service and the collection of accurate data for cancer registries, providing feedback for those caring for patients with cancer. It is important to have robust local processes in place to ensure that the MDTM clinical leads and other key members and cancer registries are informed of supplementary or revised histology reports that may affect patient treatment and data collection.

Table 1: List of core and non-core data items.

	Core	Non-core
Request form	• Patient demographics • Date and time of procedure • Specimen type • Capsule status	• Previous biopsy and/or cytology results • Tumour marker results (when performed) • Prior chemotherapy • Genetic status
Macroscopy	• Specimen type • Capsule status • Tumour site • Macroscopic description of omentum including dimensions, evidence of macroscopic involvement, and size of maximum omental deposit	• Tumour dimensions • Block key
Microscopy	• Tumour type • Grade (except mucinous carcinoma) • Presence or absence of serous tubal intraepithelial carcinoma (STIC) • Sites of involvement • Peritoneal cytology • Lymph node status and site • Provisional stage (FIGO) • Mismatch repair testing results (if performed) • For borderline tumours, additional core data items are: – microinvasion • For borderline serous tumours, additional core data items are: – micropapillary architecture – presence of implants (also applicable to seromucinous borderline tumours)	• Pattern of invasion/percentage of infiltrative pattern (mucinous carcinoma) • Grade (mucinous carcinoma) • Carcinosarcoma components • Chemotherapy response score (CRS) • Coexistent pathology • Immunohistochemical and molecular ancillary data • For borderline mucinous tumours, an additional non-core data item is: – intraepithelial carcinoma

1.1 Target users and health benefits of these guidelines

The target primary users of the dataset are consultant cellular pathologists, specialty registrars, specialty and associate specialist doctors and biomedical scientists and, on their behalf, the suppliers of IT products to laboratories. Standardised cancer reporting and MDT working reduce the risk of histological misdiagnosis and help to ensure that clinicians have all the pathological information required for tumour staging, management and prognosis. Collection of standardised cancer-specific data also provides information for healthcare providers and epidemiologists and facilitates international benchmarking and research.

2 Specimen request form

2.1 Core data items

2.1.1 Patient demographics

An electronic request system is recommended as paper request forms increase the potential for error, although it is recognised that some hospitals have not yet adapted these and specimens received from external hospitals will remain paper-based. The request form should include full patient details, including demographics. In addition to the hospital number, it is advised that the NHS number should be included wherever possible, as this is a unique identifier across geographic sites. Inclusion of the name of the requesting consultant allows future communication and ensures the report is sent to the correct clinician.

[Level of evidence – GPP. Including correct demographics is paramount to prevent errors.]

2.1.2 Date and time of procedure

This will be important for auditing the 62-day target and monitoring the time between the procedure and the receipt and reporting of pathological samples. Recording the date and time of specimen receipt is also useful in situations where delays occur between the time of procedure and receipt in the laboratory, to aid accurate error logging, incident reporting and performance audits.

[Level of evidence – GPP.]

2.1.3 Specimen type

This allows correlation of pot labels with the request form to avoid laboratory errors and is particularly important in cases with multiple specimens (which may arrive separately, such as when the fresh main specimen is received first for tissue collection or frozen section) or when the normal anatomy is unclear from the macroscopic examination.

[Level of evidence – GPP.]

2.1.4 Capsule status

For ovarian neoplasms, it is important to record any perioperative complications that might have resulted in loss of capsular integrity or any evidence of leakage of cyst contents during surgery. If cysts have been deflated laparoscopically, the pathologist should be made aware of this and whether the rupture occurred within a bag (which does not alter the stage) or within the peritoneal cavity. Approximately 25% of ovarian and primary tubal carcinomas present as stage I at diagnosis; those rupturing during surgery are assigned FIGO stage IC1, while those that have ruptured prior to surgery are considered FIGO stage IC2, according to the 2014 FIGO staging system.[3]

A recent meta-analysis[8] assessed risk factors for survival and demonstrated that progression-free survival was worse for patients with preoperative rupture. Conversely, patients with perioperative rupture did not have a significantly worse outcome than those with no rupture when a complete surgical staging procedure had been carried out, with or without post-operative platinum-based chemotherapy.[8] Clear cell carcinoma has a greater propensity for intraoperative capsular rupture,[9] most likely secondary to endometriosis or other adhesions.

[Level of evidence B – Capsule status has been demonstrated to influence patient survival and outcome.]

2.2 Non-core data items

2.2.1 Previous biopsy and/or cytology results

Knowledge of the result of any previous diagnostic specimens is key to the optimum handling of resection specimens and also allows familiarity for accurate reporting of frozen sections.

[Level of evidence – GPP.]

2.2.2 Tumour marker results

Tumour marker results (when performed) – for example CA125, CEA, CA19.9, alpha-fetoprotein and inhibin – should be included.

[Level of evidence – GPP. Tumour markers are helpful to guide the pathologist to diagnosis and ensure sufficient sampling.]

2.2.3 Prior (neoadjuvant) chemotherapy

The morphological features (both at macroscopic and microscopic level) may be dramatically altered as a result of chemotherapy; therefore, knowledge of the chemotherapy status of the patient is crucial. A biopsy is usually performed for confirmation of diagnosis prior to commencing treatment. Referral to the pre-treatment sample may be necessary before assigning a final histotype to resection specimens. In exceptional circumstances, a cell block made from a cytology sample, with appropriate immunohistochemical investigations, may be the only source of original chemotherapy-naive material. Knowledge of prior chemotherapy will also allow the pathologist to take appropriate blocks at the time of specimen dissection for tumour regression grading and assessment of chemotherapy response score (CRS – see section 6.2.4). CRS provides valuable prognostic information in patients who have been treated with neoadjuvant chemotherapy and may guide further treatment, including entry into trials.

[Level of evidence C – CRS correlates with patient outcome in those treated with neoadjuvant chemotherapy.]

2.2.4 Genetic status

10–15% of carcinomas of the ovary and fallopian tube are thought to be due to either germline mutations in *BRCA1* or *BRCA2* (approximately 90%) or Lynch syndrome (LS; approximately 10%).[10–12] *BRCA* mutations are associated with HGSCs (up to 23% of patients)[13] and carcinosarcomas with an epithelial component of HGSC. LS is associated predominantly with endometrioid and clear cell carcinomas, but also mixed carcinomas, and dedifferentiated and undifferentiated carcinomas. Preoperative genetic status is often unavailable, and up to 45% of patients found to have a germline mutation may not have any family history of breast or ovarian carcinoma. However, genetic status remains a recommended data element for the following reasons.

Associating morphology with mutation status

HGSC associated with *BRCA* mutations are more likely to show a particular combination of morphological features, namely solid, pseudoendometrioid and/or transitional cell-like

(SET) architecture, higher mitotic rates, prominent nuclear pleomorphism with bizarre forms, dense tumour-infiltrating lymphocytes and necrosis.[14,15] Although this morphological pattern is not specific to tumours with a *BRCA* mutation, knowledge of the genetic status may allow pathologists to correlate these features with a *BRCA* mutation, reducing the likelihood of misclassification as another histotype. Implications of *BRCA* mutations include better prognosis, a higher rate of platinum sensitivity and the possibility of targeted chemotherapy regimens, including PARP inhibitors.[13] If patients are found to have a germline mutation, they and their relatives can be referred for genetic counselling and screening.

Adequate sampling at first pass, reducing time and loss of tissue

Knowledge of genetic status allows appropriate sampling of resection specimens (e.g. more extensive sampling of the uterus in a pelvic clearance of a patient who has LS; please refer to section 5 of this dataset and the RCPath *Tissue pathways for gynaecological pathology*[16] for further guidance).

Allowing appropriate testing

Approximately 1–2% of all ovarian cancers are associated with LS, which is caused by a germline mutation in 1 of the 4 genes encoding DNA mismatch repair (MMR) proteins. Women with LS have an increased lifetime risk (7–15%) of developing an ovarian cancer compared with the general population (1–2%); 60% of women with LS who develop cancer will have a gynaecological cancer (ovarian or endometrial) as their 'sentinel' cancer.[11] Mutations in *MSH2* appear to be most commonly associated with ovarian cancers.[17] MMR immunohistochemistry should be performed in cases of endometrioid and clear cell carcinomas (as well as mixed, dedifferentiated and undifferentiated carcinomas), or when personal or family history raises the possibility of LS.

Non-BRCA/non-LS conditions are not required to be included

The presence of other non-*BRCA*/LS ovarian cancer syndromes is noted; however, these are rare and no genotype–phenotype correlations have yet been identified.[18]

Avoiding repeat testing

Knowledge of prior genetic status avoids unnecessary molecular testing of tissue, such as *MLH1* promoter hypermethylation studies in the case of *MLH1* and *PMS2* loss by immunohistochemistry, or homologous recombination deficiency (HRD) testing in HGSC, thus saving pathologist and laboratory capacity.

[Level of evidence B – Knowledge of genetic status is vital for immunohistochemical/molecular testing purposes and potential future treatment.]

3 Preparation of the specimen before dissection

The capsular surface of the ovary should be carefully examined for signs of rupture, including surgical rupture, or surface involvement. Adhesions may indicate foci of capsular rupture.

Occasionally, the tube may form a mass closely entangled with the ovary, or the fimbrial end may be seen to merge with the ovarian capsule. The absence or otherwise engulfment of the fallopian tube and/or its fimbrial end should be documented as this may affect staging, as does the presence of tumour on the tubal serosal surface. Evidence of previous sterilisation either by ligation or as a consequence of Filshie or Hulka clips should be noted.

Inking and slicing of the neoplasm should only be undertaken following careful external examination. Inking of the capsular surface can be helpful at possible sites of involvement or capsular defect. After slicing, a neoplasm may need to be left to allow adequate fixation. The specimen container should be checked to ensure that it is large enough and contains an adequate amount of formalin.

Prior opening of the accompanying uterus is recommended to enable fixation of the endometrium, which is prone to autolytic changes if not exposed to formalin soon after receipt in the laboratory.

A photographic record of the specimen may be useful, for example in cases of capsular breach or surface tumour, or ovarian masses with unusual macroscopic appearances.

4 Specimen handling and block selection: data items

4.1 Core data items

4.1.1 Specimen type

This allows confirmation that the specimen received is correct and prompts identification of any structures mentioned on the request form. Laterality should also be given if applicable.

[Level of evidence – GPP.]

4.1.2 Capsule status

As described in section 2.1.4, this is important for staging purposes.

4.1.3 Macroscopic tumour site

Assigning site of origin is important for HGSCs. Please see section 6.1.5 for guidance.

[Level of evidence A – Documenting sites of involvement is critical for staging, in particular HGSCa where tubal involvement may be microscopic; please refer to sections 6.1.5 and 6.1.6.]

4.1.4 Macroscopic description of omentum

The description should include:

- dimensions
- presence or absence of tumour
- maximum dimension of the largest deposit.

An infracolic omentectomy is usually performed as part of the staging procedure for a suspected ovarian carcinoma. Occasionally, only an omental biopsy will be performed. The omentum should be measured in 3 dimensions. The presence or absence of gross tumour involvement should be documented and the size of the largest tumour nodule measured.

If the omentum is grossly involved, a single block of tumour with macroscopic description of the greatest dimension of tumour deposit is sufficient for accurate substaging of stage III tubo-ovarian carcinomas.[19,20] Sampling 5 blocks of grossly uninvolved omental specimens has been demonstrated to give fairly good sensitivity for detection of metastases.[21] Therefore, we advise sampling 4 to 6 blocks, in line with the ICCR recommendations, depending on the size of omentum received.[22] Note, in cases of serous borderline tumours with an exophytic component, implants are neither visible nor palpable and to exclude their presence sampling of 8 to 10 blocks may be more appropriate.

[Level of evidence D – Sampling in 5 blocks has been demonstrated to yield metastatic disease in grossly uninvolved omentum in the majority of cases.]

4.2 Non-core data items

4.2.1 Tumour dimensions

Historically, tumours have been measured in 3 dimensions. This is helpful in visualising tumour volume (particularly if the case is sent for a second opinion) and ensuring appropriate sampling.

[Level of evidence D.]

4.2.2 Block identification key

Accurate description of the origin for all tissue blocks is important, in particular if the case is required for external or internal review. Identification of a suitable tumour block for further molecular or immunohistochemical testing, if required (e.g. as part of a trial or to ascertain drug susceptibility), at the end of the block key is encouraged, as this will allow rapid retrieval without requiring re-review of sections.

[Level of evidence – GPP.]

5 Specimen handling and block selection: a guide

5.1 Ovarian masses

It is recommended that all ovarian masses are measured in 3 dimensions. Documentation of specimen size is performed mainly to ensure that there has been adequate sampling, although in some cases (such as adult granulosa cell tumour) size may have prognostic value.[22,23] In cases of mucinous tumours, a unilateral tumour of large size would support a primary ovarian origin. Specimen weight may be recorded if desired. As described in section 3, the presence and appearance of the fallopian tube should be recorded.

It is important to determine whether the ovarian capsule is intact. If rupture is identified, discussion at the MDTM or reference to the operation notes may be helpful in concluding whether this occurred at or prior to surgery. Inking of the capsular surface may help guide later microscopic assessment of capsular breach.

Ovarian masses may be received fresh for frozen section diagnosis, at which point they should be examined and suspicious (solid, papillary) areas sought and preferentially selected for frozen section examination. The limitations of frozen section diagnosis (in particular for borderline tumours and in overdiagnosis of clear cell carcinoma) have been discussed elsewhere.[24,25]

Ovarian masses should be sliced and their cystic or solid nature noted, as well as the presence and size of papillary excrescences.

Adequate sampling is paramount. Sampling should be centred on any papillary and solid areas, in addition to thin-walled cystic components. The former are typically the sites of stromal invasion or malignancy, while cystic components are useful to demonstrate pre-existent or background changes, such as endometriosis. Ovarian cysts that are entirely thin walled may be rolled up analogous to a 'membrane roll' in placentas to enable a higher surface area to be represented in a single block.

The recommendation to submit entirely any tumour <2 cm and to submit a minimum of 1 block per 10 mm for tumours ≥2 cm has been generally adopted, as recommended by other cancer datasets at a range of other anatomical sites. Ovarian tumours are often heterogeneous. Adequate sampling is important for numerous reasons, including:

- to exclude microinvasive foci in borderline tumours
- to identify small foci of carcinosarcoma in HGSC
- to identify histologically diagnostic areas in poorly differentiated neoplasms or those with heterologous elements or displaying multiple lines of differentiation.

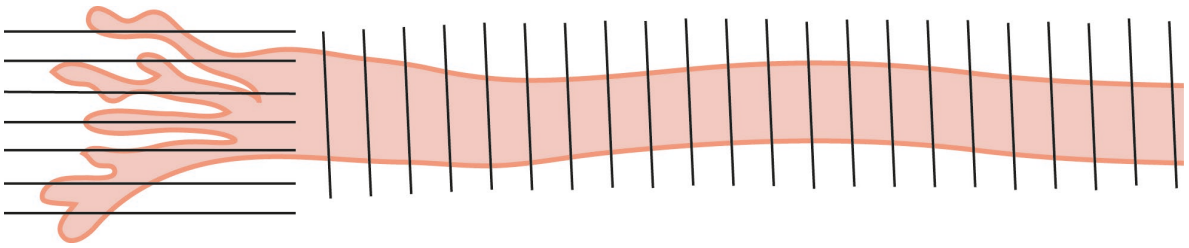
Mucinous carcinomas are the most heterogeneous group of ovarian tumours[25] and stromal invasion may only be very focal. Therefore, consideration of more extensive sampling in mucinous borderline tumours with intraepithelial carcinoma and/or microinvasion is warranted. In addition, it is recommended that 2 blocks per 10 mm should be taken in mucinous borderline tumours ≥10 cm in size (owing to the recognised heterogeneity in this subtype), or in cases where the diagnosis of a mucinous borderline tumour has already been made at frozen section or prior to sampling of the main specimen.[26,27]

Increased sampling is also suggested in some cases of serous borderline tumour (e.g. those with very complex papillary/solid areas, micropapillary/cribriform subtype, or when microinvasion is detected in the initial sections). However, with a large homogeneous neoplasm or a simple, thin-walled cystic lesion without capsular thickening or papillary processes, more limited sampling may be appropriate with the option of further sampling after examination of the initial haematoxylin and eosin (H&E)-stained sections, should this be indicated.

5.2 Fallopian tube

It is now recognised that most extrauterine HGSCs arise from the fimbrial end of the fallopian tube. Submission of the entire tube using the SEE-FIM protocol (Figure 1) is therefore advocated in patients with extrauterine HGSC with bilateral macroscopically normal tubes and is also required in patients with a high risk of familial tubo-ovarian malignancy. This will facilitate identification of occult serous tubal intraepithelial carcinoma (STIC) and HGSC.

Figure 1: The SEE-FIM protocol. The fimbrial end is sectioned parallel to the long axis of the tube, the remainder of the fallopian tube sectioned transversely at 2 mm intervals, and the entire tube embedded.[28]



A SEE-FIM-like protocol should be undertaken on all macroscopically normal fallopian tubes resected for ovarian carcinomas (other than HGSC) and borderline tumours. This involves submission of the entire fimbrial end, but only representative transverse sections of the non-fimbrial portion. It would also be reasonable to adopt the above SEE-FIM-like protocol for all other tubal resections, including those undertaken for benign conditions, to identify premalignant and malignant lesions (reported in <1% of patients, 0.7% in one study).[28]

5.3 Appendix

This should be inspected and described, including any serosal nodules or luminal dilatation, and the contents noted, in particular the presence of mucinous material. The entire appendix should be embedded when the ovarian mass is mucinous in nature, as the primary appendiceal neoplasm in cases of metastatic disease may be microscopic.

5.4 Lymph node biopsies

Lymph nodes should be submitted in separate pots labelled according to their site of origin. The number of lymph nodes retrieved from each site should be recorded. The presence of macroscopic involvement of lymph nodes by tumour should be recorded; in such cases, only representative sections are required to confirm the presence of metastatic disease. The presence of extracapsular spread may become prognostically

important in the future but is not currently a core or non-core data item. Lymph nodes without obvious macroscopic involvement should be sliced along the short axis (i.e. perpendicular to the long axis) at 2–3 mm intervals and submitted in their entirety for histological examination. Nodes <5 mm should be bisected if feasible or otherwise processed whole. Multiple intact small lymph nodes (3 mm or less) may be submitted in 1 cassette – this should be detailed within the block key.

5.5 Peritoneal biopsies

These should be submitted in separate pots and labelled as to their site of origin. They should be submitted in their entirety for histological examination if macroscopically normal, but a single section may suffice if they are obviously involved by the tumour.

6 Microscopic description

6.1 Core data items

6.1.1 Histological type (carcinomas and borderline tumours)

Histological tumour subtype should be allocated for both borderline tumours and carcinomas as defined by the WHO classification (Appendix A).[7] Carcinosarcoma is now understood to derive from an epithelial origin,[29] the epithelial component usually being HGSC.[30,31] A new category of mesonephric-like adenocarcinoma is introduced into this dataset, following its morphological, immunophenotypic and molecular characterisation in recent years, and clarification of its likely Müllerian derivation. Mesonephric-like adenocarcinoma may be accompanied by other tumour types, including low-grade serous carcinoma and mucinous borderline tumours, and therefore are more likely to present as a mixed tumour; they may also rarely have an associated sarcomatous component (mesonephric-like carcinosarcoma).[32–35]

Management of ovarian carcinoma is currently largely still dependent on tumour stage. However, targeted therapies are now available for some tumour types (e.g. PARP inhibitors in *BRCA*-associated and HRD-positive HGSC) and, as discussed in section 2.2.1, diagnosis of a particular tumour type may indicate an underlying germline mutation.[10–13] There is also an increasing understanding that ovarian carcinoma subtypes are associated with different molecular pathogenesis and therefore have distinct natural histories and responses to chemotherapy.[36–39] While lagging behind the endometrial carcinoma molecular classification, the Cancer Genome Atlas (TCGA) classification for

endometrial carcinoma[40] may have a role in prognostication in ovarian endometrioid carcinoma and, while still in its early stages, this appears promising.[41–46] Please refer to Appendix C for immunohistochemical aids in diagnosis and a guide to molecular testing.

Mixed carcinomas have been reintroduced in the most recent WHO classification,[7] which represent about 1% of all ovarian carcinomas[47] and are often mixed clear cell and endometrioid carcinomas in the setting of endometriosis. Mixed carcinomas are diagnosed less often than previously, as molecular studies have established that historically diagnosed mixed high-grade serous and clear cell/endometrioid carcinomas usually represent HGSCs demonstrating a range of morphologies. The different components of a mixed carcinoma should be discretely identifiable, with differing morphology and immunophenotype, and the proportion of each subtype should be detailed in the report.

Seromucinous carcinoma has been removed from the 2020 WHO classification[7] since most tumours previously classified as such are now recognised to represent either endometrioid carcinoma (with mucinous differentiation) or low-grade serous carcinoma, and can be classified following thorough sampling and ancillary testing as required (please refer to Appendix C).

[Level of evidence A – Tumour subtype strongly influences patient outcome and treatment options.]

6.1.2 Tumour grade

Despite the presence of various universal grading systems, it is recommended that different tumour grading methods should be utilised based on the histological subtype. If chemotherapy has been given, grading should be performed on the initial diagnostic biopsy as post-chemotherapy biopsies may be unreliable owing to morphological alterations.

Serous carcinoma

High-grade and low-grade serous carcinomas represent 2 distinct tumour entities characterised by different underlying molecular pathways and response to treatment.[48] Therefore, despite the names including the word ‘grade’, grading per se does not apply to serous carcinomas and they should be identified by their histotype.[49,50] It is recognised that, in exceedingly rare cases, both high-grade and low-grade serous carcinoma may co-exist, or the former may have originated from a low-grade element, representing a form of transformation.[51,52]

Low-grade serous carcinoma should demonstrate only mild nuclear atypia with a mitotic index of <12 mitoses/10 high-power fields. Necrosis is rare. Conversely, HGSC demonstrates widespread nuclear pleomorphism (>3-fold variation in nuclear size), a high mitotic rate, and in 95% of cases is associated with an aberrant p53 immunophenotype (diffuse strong positivity, null, or rare granular cytoplasmic staining patterns).[53]

Clear cell carcinoma, undifferentiated carcinoma, carcinosarcoma and mesonephric-like adenocarcinoma

Clear cell carcinoma, undifferentiated carcinoma and carcinosarcoma are by definition high-grade tumours. Due to its aggressive behaviour, grading similarly does not apply for mesonephric-like adenocarcinoma.

Endometrioid carcinoma

It is recommended that carcinomas of endometrioid type are graded according to the FIGO grading system, analogous to those arising within the endometrium: grade 1 = ≤5% solid component; grade 2 = 6–50% solid component; grade 3 = >50% solid component (with squamous metaplasia not included in the architectural assessment). When low-grade (grade 1–2) tumours show marked cytological atypia in >50% of tumour cells, the grade should be increased by 1; however, this raises the possibility of a HGSC with glandular growth pattern, which needs to be excluded by use of immunohistochemistry (please refer to Appendix C). Endometrioid carcinomas associated with an undifferentiated component (dedifferentiated carcinoma) should be automatically regarded as grade 3.

Mucinous carcinoma

There is no definitive evidence-based grading system for primary ovarian mucinous carcinoma. There is, however, increasing evidence that the FIGO grading system is unhelpful in prognostication in this subtype. In one study, albeit with small numbers, both Silverberg grade (Table 2) and grade based on a novel growth-based system (grade 1 = less than 10% infiltrative growth, grade 2 = 10% or more infiltrative growth pattern) were significantly associated with disease-free survival.[54] While the Silverberg grading system is 3-tier, it becomes essentially a 2-tier system for mucinous carcinoma as virtually no cases are classified as grade 3. Inclusion of both Silverberg grade and percentage of infiltrative growth are suggested as non-core data items; the latter can be converted to a growth-based grading system if required at a later date.

Table 2: Silverberg grading system. Grade 1 = score 3–5, Grade 2 = 6–7, Grade 3 = 8–9.[54]

Criteria		Score
Architecture	Glandular	1
	Papillary	2
	Solid	3
Nuclear atypia	Mild	1
	Moderate	2
	Severe	3
Mitotic count per mm^2	< 3	1
	3–7	2
	> 7	3

The presence of a malignant sarcomatoid mural nodule renders any mucinous carcinoma or mucinous borderline tumour high grade (grade 3), but these should be differentiated from reactive sarcoma-like nodules, which are often associated with inflammation.

It is also recognised that distinction between mucinous borderline tumour and mucinous carcinoma with an expansile pattern of invasion is a difficult area, with a high degree of interobserver variability.[55] When this problem is encountered, consideration of further tumour sampling and seeking a second opinion is advised. Immunohistochemical markers and molecular testing are not by themselves helpful in resolving this issue.

Borderline tumours

The WHO classification recommends a cut-off between the diagnoses of benign cystadenoma with focal epithelial proliferation and borderline tumour of 10% of epithelial volume for serous and mucinous tumours; this threshold can be extrapolated to all epithelial subtypes. However, this remains an arbitrary cut-off, which may give rise to interobserver variability,[56] and is dependent on many factors including sampling techniques. In cases such as extensive torsion-related infarction, a lower threshold may be prudent, and diagnosis is left at the discretion of the individual pathologist.

[Level of evidence B – There is a good evidence base for grading of HGSCa, clear cell carcinoma and low-grade serous carcinoma, while the grading of endometrioid carcinoma has been less extensively studied than in the endometrium. Grading of mucinous carcinoma and borderline tumours, as detailed above, represents good practice points rather than being evidence based.]

6.1.3 Implants (serous and seromucinous borderline tumours)

Epithelial implants are present in various intra-abdominal sites in approximately 20% of patients with an ovarian serous borderline tumour. Since the publication of the WHO 2014 classification, invasive implants have been reclassified as low-grade serous carcinoma and the term 'implant' is reserved for disease that is non-invasive;[7] the differentiation between what were formerly referred to as invasive and non-invasive implants is therefore of utmost importance for management and prognosis.[57] Non-invasive implants show no stromal infiltration and often appear 'stuck on' the peritoneal surface. Distinction from low-grade serous carcinoma (invasive implants) is a difficult and subjective area, particular in biopsy samples where underlying stroma may not be included.[58,59] Non-invasive implants and low-grade serous carcinoma may also be seen at the same site.

In the small number of cases in which it is not possible to determine whether an implant is invasive (i.e. low-grade serous carcinoma) or non-invasive, the term 'indeterminate type' may be used.[7] However, obtaining an expert second opinion, submitting further blocks or performing further levels should be considered as first-line options to resolve this question, and this category should only be used in very rare circumstances.

Seromucinous borderline tumours may also give rise to non-invasive implants, although less frequently than serous borderline tumours, probably in the region of 3–10% of cases at most.[60–62]

Apart from serous and seromucinous borderline tumours, other borderline tumour types (mucinous, endometrioid, etc.) do not give rise to implants and any extra-ovarian disease therefore represents metastasis. In these cases, further blocks should be taken from the primary ovarian tumour and radiological review undertaken to exclude an unsampled primary carcinoma or occult metastatic non-ovarian malignancy.

[Level of evidence C – Presence of invasion is associated with a poorer outcome, although designation of invasion in practice may be difficult and based on expert opinion.]

6.1.4 Special features in borderline tumours

Microinvasion

Microinvasion most commonly occurs within serous or mucinous borderline tumours and, in most studies, has not been found to affect prognosis. Investigators have set different thresholds for the upper limit of diagnosis of microinvasion (ranging from 1 to 5 mm) and some use area rather than maximum diameter.[7,56,58,63] We endorse the WHO suggestion of <5 mm in greatest dimension. Stromal invasion may be encountered as individually

infiltrating cells (usually seen in association with serous borderline tumours), destructive stromal invasion or expansile invasion (back-to-back glands, usually mucinous borderline tumours). Microinvasion may be multifocal and, if spatially discrete, these foci should be regarded as separate areas and their dimensions not added together.

Micropapillary and/or cribriform architecture

Many serous borderline tumours have small foci of micropapillary (defined as non-hierarchical branching with papillae of height >5 times the width) or cribriform architecture.[7] The diagnosis of micropapillary/cribriform subtype of serous borderline tumour requires at least 1 confluent area displaying micropapillary and/or cribriform architecture with a dimension of at least 5 mm.

[Level of evidence D – There are conflicting opinions based on small studies.]

6.1.5 Serous tubal intraepithelial carcinoma and assignation of primary site of origin in extrauterine HGSC

As described in section 5.2, the majority of extrauterine HGSC arise in the fimbrial end of the fallopian tube. The identification of serous tubal intraepithelial carcinoma (STIC) or HGSC in the mucosa of the fallopian tube are sufficient to assign an extrauterine HGSC as being of primary fallopian tube origin. In the setting of HGSC, failure to detect the fallopian tube either macroscopically or microscopically implies overgrowth by tumour, and these are also regarded as being of tubal origin.

Table 3: Assignation of primary site of origin. Note: Each individual criterion is sufficient for assignation of the primary site.

Primary site	Criteria
Fallopian tube (examined with SEE-FIM-like protocol)	1. STIC present. 2. Invasive mucosal HGSC present within the fallopian tube, regardless of the presence of STIC, or ovarian or peritoneal disease. 3. Fallopian tube partly or wholly incorporated into a tubo-ovarian mass, regardless of the presence of STIC, or ovarian or peritoneal disease.
Ovary	An ovarian mass or microscopic involvement of the ovary by HGSC is present, **in the absence** of STIC, mucosal tubal HGSC or tubal engulfment (when fallopian tubes have been examined by SEE-FIM protocol, see Figure 1).
Tubo-ovarian	1. Small biopsy specimen including cytology samples. This should be supported by appropriate immunohistochemistry to exclude the possibility of a uterine serous primary. 2. Post-chemotherapy with no residual disease.
Primary peritoneal	This should **only** be assigned in primary debulking specimens (i.e. prior to chemotherapy). Peritoneal HGSC is diagnosed only **in the absence** of STIC and macroscopic or microscopic involvement of the ovaries (including surface involvement) or tubal mucosa. It is confirmed by immunohistochemistry to exclude mesothelioma and metastatic carcinoma.

STIC and small intramucosal carcinomas are frequently identified in macroscopically normal fallopian tubes processed with the SEE-FIM protocol. The diagnosis of STIC is highly reproducible when morphology is combined with p53 and Ki67 immunohistochemistry (mutant p53 immunophenotype and Ki67 labelling of >10% in the setting of pleomorphic cells with loss of cilia).[64,65] Note that, after chemotherapy, Ki67 labelling of >10% is not required for the diagnosis of STIC due to the post-chemotherapy reduction in proliferative activity.

The ICCR recommends that isolated STIC (i.e. without invasion or extratubal spread) be reported as stage IA tubal carcinoma, with a note that no invasive carcinoma is present; the risk of progression to peritoneal HGSC may be up to 28% over 10 years.[1,66] Precursor lesions not amounting to STIC (tubal intraepithelial lesion in transition/serous tubal intraepithelial lesion) are well established, but their clinical significance remains unclear.[67]

The ovary should only be assigned as the primary site of HGSC after carefully excluding any tubal mucosal involvement.[68] Tumours showing significant tumour regression post-chemotherapy without clear evidence of tubal or ovarian origin should be classified as tubo-ovarian in origin. A designation of primary peritoneal carcinoma can only be made when tubal and ovarian diseases have been excluded by complete pathological examination prior to chemotherapy, i.e. in primary debulking surgical specimens.[68] In the rare cases in which a primary site of origin (tubal, ovarian or peritoneal) cannot be assigned, they should be recorded as 'undesignated',[3] although the term 'tubo-ovarian' is also acceptable.

[Level of evidence A – It has been clearly demonstrated that HGSCa originates from the fallopian tube in the majority of instances.]

6.1.6 Histological sites of tumour involvement, including cases with uterine involvement

Recording sites of tumour involvement is necessary to allow accurate staging, which should be performed according to the FIGO (2014) staging system (Appendix B). Tumours of the ovary, fallopian tube and peritoneum are all staged in the same manner.

The above discussion on primary site of origin of HGSC (section 6.1.5) applies only to extrauterine HGSC. Synchronous carcinomas of the tube/ovary and endometrium occur in about 10% of women with ovarian cancer; the following considerations apply.[69]

- When the tumours have different histotypes, they can be considered as being of independent primary origin. The tubal/ovarian carcinoma and endometrial carcinoma should be staged separately (please refer to the RCPath dataset for histological reporting of endometrial cancer).[70]
- When the tumours have high-grade serous morphology, molecular studies have shown that, in most cases, they are clonally related and, therefore, regarded as metastatic from one site to the other, usually from the endometrium to the adnexa, especially in the presence of a bulky endometrial mass. This is true even if the tubal disease involves only the mucosa, forming a STIC-like lesion.[71]

Of note, non-gynaecological primary malignancies may also metastasise to the tubal mucosa in a similar manner.[72] Synchronous independent serous carcinomas of the endometrium and tube/ovary are much rarer but their recognition may have implications for patient management. Immunohistochemistry markers such as Wilms tumour 1 (WT1) and the oestrogen receptor (ER) are unlikely to be helpful in distinguishing these 2

scenarios, although finding different patterns of p53 staining in the 2 tumours would suggest different driver mutations and, therefore, the presence of 2 independent primary lesions. Where there is genuine consideration of independent primary tumours, molecular testing to compare the *TP53* driver mutations in each tumour is useful.

For endometrioid carcinomas involving both the endometrium and ovary, please refer to the RCPath dataset for histological reporting of endometrial cancer.[70]

[Level of evidence A – Sites of involvement dictate tumour stage, which directly influences patient outcome.]

6.1.7 Peritoneal cytology

Peritoneal cytology status is required for accurate staging of stage I ovarian tumours (positive cytology upstages to FIGO stage IC3) and may influence the decision for adjuvant treatment.

[Level of evidence B – Cytology status dictates subclassification of stage IC.]

6.1.8 Lymph node status

It is important to report the site of involved lymph nodes since any involvement of lymph nodes outside the abdominal cavity (including inguinal lymph nodes) represents stage IV disease. Measurement of the size of the metastatic deposit is also necessary, as the revised 2014 FIGO staging system classifies retroperitoneal (pelvic, para-aortic) nodal metastases measuring up to 10 mm as IIIA1(i) and those >10 mm as IIIA1(ii); nodal involvement can, as per the TNM classification, be further classified as micro- or macrometastases. It has been suggested that rare cases with intra-abdominal lymph node metastasis (including intra-omental lymph nodes) without retroperitoneal involvement should be staged as FIGO IIIC and regarded as intra-abdominal disease.[73]

Lymph node involvement in the setting of serous borderline tumours is not uncommon (10–30%) and does not appear to affect overall survival.[73–76] The exception to this is confluent nodular aggregates measuring >1 mm,[53] which may be associated with a poorer survival and invasive foci in the omentum. Similarly, the involvement of nodal sinuses by non-invasive small epithelial groups representing serous borderline tumour should be distinguished from invasive nodal implants with desmoplasia, which represent low-grade serous carcinoma.

[Level of evidence B – Nodal status contributes to staging, which directly influences patient outcome.]

6.1.9 Provisional pathological staging pre-MDTM

Although a provisional FIGO stage may be given prior to the MDTM, it is strongly recommended that the final FIGO stage should be assigned at the gynaeco-oncology MTDM when all the patient-related information is available. TNM staging is optional.

[Level of evidence – GPP. FIGO stage may change when all the surgical and radiological information becomes available.]

6.1.10 MMR immunohistochemistry results

Immunohistochemistry for MMR proteins is recommended in cases of endometrioid and clear cell carcinoma, as well as mixed, dedifferentiated and undifferentiated carcinomas, owing to the importance of identifying patients with Lynch syndrome (see section 2.2.4) and the future potential for immunotherapy. Please also refer to Appendix C.

[Level of evidence B – MMR protein immunohistochemistry is a reliable screening test for MMR deficiency, allowing further genetic assessment.]

6.2 Non-core data items

6.2.1 Pattern of invasion (mucinous carcinomas)

Mucinous carcinomas may show an expansile/confluent pattern of invasion or destructive/infiltrative stromal invasion. Expansile invasion is characterised by back-to-back glands that may be architecturally complex and are lined by atypical epithelium, analogous to the diagnosis of invasion in endometrial endometrioid carcinomas. Destructive stromal invasion is identified by glands, nests, cords or single cells invading stroma with an associated oedematous, desmoplastic or inflammatory response.

It should be noted that, in cases with extensive destructive stromal invasion, metastatic carcinoma should be considered. While there has been controversy around whether or not these patterns conferred any survival advantage, recent studies suggest that tumours with destructive stromal invasion are associated with a poorer prognosis than those with purely expansile-type invasion, and that an infiltrative growth pattern is an independent adverse prognostic factor.[60,77]

[Level of evidence C – Pattern of invasion influences outcome in mucinous carcinoma.]

6.2.2 Carcinosarcoma components

It may be helpful to specify the nature of the epithelial (most often HGSC, followed by endometrioid and clear cell carcinoma) and mesenchymal components, in particular the

presence of heterologous sarcomatous elements. This may be useful in cases of recurrence. No prognostic difference has been demonstrated between the presence of heterologous and homologous elements, although the prognostic significance specifically of rhabdomyosarcomatous differentiation has not been studied.[78,79] It might also be helpful to provide the clinician with the ratio of epithelial to stromal components.

[Level of evidence – GPP.]

6.2.3 Presence of intraepithelial carcinoma (mucinous borderline tumours)

This is another controversial area that may have large interobserver variation and is of uncertain significance.

[Level of evidence C – Conflicting evidence as to its prognostic value.]

6.2.4 Response to neoadjuvant chemotherapy

Many cases of advanced stage ovarian carcinoma are now treated with neo-adjuvant chemotherapy, and patients subsequently undergo interval debulking surgery after the third or fourth cycle. The chemotherapy response score (CRS) has been validated for use in HGSC, shows good reproducibility and correlates with progression-free survival.[80–83] It is therefore important both as a prognostic tool and to guide future therapy in cases where there is histological evidence of poor response.[80,82,83]

Table 3: Chemotherapy response score. *Fibro-inflammatory changes are denoted by fibrosis associated with macrophages including foam cells, mixed inflammatory cells and psammoma bodies; to be distinguished from tumour-related inflammation or desmoplasia. Adapted from Böhm *et al*.[80]

Score	Criteria	Tumour regression grading
1	Mainly viable tumour with minimal regression-associated fibro-inflammatory changes limited to a few foci*	No or minimal tumour response
2	Multifocal or diffuse regression-associated fibro-inflammatory changes, with viable tumour ranging from diffuse sheets, streaks or nodules to extensive regression with multifocal but easily identifiable residual tumour	Partial tumour response
3	Mainly regression, with few irregularly scattered individual tumour cells or cell groups (all measuring < 2 mm), or no residual tumour identified	Near complete or complete response

As set out by the ICCR,[84] the scoring method to be followed is detailed here:

- scoring should be carried out on a single haematoxylin and eosin-stained section of omentum
- the block showing the least response to chemotherapy should be selected
- the amount of viable tumour should be assessed and CRS assigned as per the criteria in Table 3
- in cases where no residual tumour or evidence of previous tumour involvement (such as fibro-inflammatory changes or psammomatous calcification) is seen, imaging reports should be checked to identify whether the tumour was present in the omentum prior to chemotherapy; if no omental involvement was reported, the CRS should not be given.

[Level of evidence A – CRS is associated with progression-free survival.[82]]

6.2.5 Coexistent pathology

This includes pertinent features such as a background benign neoplastic component (e.g. benign Brenner tumour in the background of a mucinous borderline tumour), endometriosis and reactive changes, such as tubal inflammatory pathology.

6.2.6 Immunohistochemistry and molecular ancillary testing

Please refer to Appendix C for further information. As discussed in section 4.2.2, it is useful to document a representative tumour block for any subsequent molecular testing and good practice to include cellularity and tumour content here in addition.[85]

7 Diagnostic coding and staging

As described in section 6.1.9, the final FIGO stage should be assigned at the gynaeco-oncology MTDM, but provisional staging prior to the MDTM may be given. Coding should be performed using SNOMED CT codes (see Appendix A). A list of applicable M SNOMED and SNOMED CT codes is provided in Appendix A. Mapping SNOMED CT terminology is provided. The Union for International Cancer Control (UICC) TNM stage remains optional.

It should be noted that transmural involvement of the bowel is staged as FIGO IVB.[3]

8 Reporting of small biopsy specimens

In cases where a total primary surgical cytoreduction is feasible, most carcinomas of ovarian/tubal/primary peritoneal origin are now removed following extensive radiological and clinical investigation without a prior histopathological diagnosis.

However, the use of radiologically guided core biopsies via the transabdominal or transvaginal route for diagnosis prior to treatment with neoadjuvant chemotherapy has become more frequent and is now routine practice in patients with widespread or bulky disease. They are also performed in patients who have had a previous carcinoma (particularly breast), or in which the pattern of disease is atypical, to confirm a gynaecological origin.

The number of core biopsies should be recorded and the length of each core documented. Preservation of tissue for further immunohistochemical and molecular testing is becoming increasingly important; therefore, each core should ideally be placed in a separate cassette to enable optimum utilisation.

When the morphological features are those of a HGSC, an immunohistochemical panel of PAX8, WT1, ER and p53 (PAX8 positive, WT1 positive, ER positive and p53 aberrant staining) is usually sufficient to confirm the diagnosis. To conserve tissue for molecular testing, cases where there is diagnostic uncertainty should be sent to a cancer centre for review before further tissue sections are taken for immunohistochemistry.[85]

9 Criteria for audit

The following are recommended by the RCPath as key assurance and key performance indicators.[86]

- **Data recording:** Cancer resections should be reported using a template or proforma, including items listed in the English COSD, which are, by definition, core data items in RCPath cancer datasets. English trusts were required to implement the structured recording of core pathology data in the COSD.
  - Standard: 95% of reports must contain structured data.
- **Turnaround times and targets:** The increasing complexity of malignant gynaecological specimens requires a tailored assessment of clinically useful and

technically feasible turnaround times. Turnaround times should be defined on a specialty-specific basis and need to be aligned with sample type and clinical urgency.

For these guidelines, consider the following parameters when recommending turnaround times:

- **Sample type:** Different biopsy types (e.g. needle biopsy, excisional, larger resections) require varying fixation and processing times. Consider the complexity and handling requirements.
- **Clinical relevance:** Urgency varies based on clinical context. For suspected malignancies, faster reporting is essential. The clinical urgency is influenced by the clinical presentation, symptom progression, necessity of subsequent treatments with a critical window between diagnosis and commencement of treatment, and frequency of MDTMs.
- **Co-dependency on other factors:** Many cases of tubo-ovarian carcinoma now require subsequent molecular testing (such as HRD testing, see Appendix C). Therefore, the time from biopsy to a final integrated diagnosis is important, but it is worth considering separating the pathway elements (transfer time from theatre to pathology laboratory, reporting a histological diagnosis and establishing an integrated histo-molecular diagnosis, especially as the latter may take several weeks). Usually, the transfer times from theatres are reasonably within local control and the reporting times are within the control of pathology departments. Instead, the Genome Laboratory Hub should be in control of the molecular test turnaround times; these targets are mandated by the NHS England Genomic Medicine Service.

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Appendix A WHO classification and SNOMED 'M' coding of surface epithelial neoplasms

Morphology	SNOMED 2/3 code	SNOMED CT terminology	SNOMED CT code
Serous tumours			
Low-grade serous carcinoma	M84603	Low-grade serous carcinoma (morphologic abnormality)	703561001
High-grade serous carcinoma	M84413	High-grade serous carcinoma (morphologic abnormality)	703563003
Serous tubal intraepithelial carcinoma	M84412	Serous intraepithelial carcinoma (morphologic abnormality)	703558002
Serous borderline tumour	M84421	Serous cystadenoma, borderline malignancy (morphologic abnormality)	128849004
Serous borderline tumour, micropapillary variant	M84602	Serous borderline tumour, micropapillary variant (morphologic abnormality)	703559005
Serous cystadenoma	M84410	Serous cystadenoma (morphologic abnormality)	51608009
Serous adenofibroma	M90140	Serous adenofibroma (morphologic abnormality)	2026006
Serous surface papilloma	M84610	Serous surface papilloma (morphologic abnormality)	67073007
Mucinous tumours			
Mucinous carcinoma	M84803	Mucinous adenocarcinoma (morphologic abnormality)	72495009
Mucinous borderline tumour	M84721	Mucinous cystic tumour of borderline malignancy (morphologic abnormality)	128852007
Mucinous cystadenoma	M84700	Mucinous cystadenoma (morphologic abnormality)	67182003
Mucinous adenofibroma	M90150	Mucinous adenofibroma (morphologic abnormality)	10705005
Endometrioid tumours			
Endometrioid carcinoma	M83803	Endometrioid carcinoma (morphologic abnormality)	30289006

Endometrioid borderline tumour	M83801	Endometrioid adenoma, borderline malignancy (morphologic abnormality)	75987005
Endometriotic cyst	M76500	Endometriotic cyst (morphologic abnormality)	103678008
Endometrioid cystadenoma	M83800	Endometrioid adenoma (morphologic abnormality)	71106006
Endometrioid adenofibroma	M83810	Endometrioid adenofibroma (morphologic abnormality)	20829008
Clear cell tumours			
Clear cell carcinoma	M83103	Clear cell adenocarcinoma (morphologic abnormality)	30546008
Clear cell borderline tumour	M83103	Clear cell adenofibroma of borderline malignancy (morphologic abnormality)	128890001
Clear cell cystadenoma	M84430	Clear cell cystadenoma (morphologic abnormality)	128687009
Clear cell adenofibroma	M83130	Clear cell adenofibroma (morphologic abnormality)	58161009
Brenner tumours			
Malignant Brenner tumour	90003	Brenner tumour, malignant (morphologic abnormality)	42194009
Borderline Brenner tumour	90001	Brenner tumour, borderline malignancy (morphologic abnormality)	89996007
Brenner tumour	90000	Brenner tumour (morphologic abnormality)	253051001
Seromucinous tumours			
Seromucinous borderline tumour	84741	Seromucinous borderline tumour (morphologic abnormality)	703565005
Seromucinous cystadenoma	84740	Seromucinous cystadenoma (morphologic abnormality)	703564009
Seromucinous adenofibroma	90140	Seromucinous adenofibroma (morphologic abnormality)	703652007
Mixed epithelial tumours (specify components)			
Malignant	M83233	Mixed cell adenocarcinoma (morphologic abnormality)	38958001

Borderline	M83231	Mixed epithelial tumour of borderline malignancy (morphologic abnormality)	399417005
Benign	M83230	Mixed cell adenoma (morphologic abnormality)	89773001
Undifferentiated and unclassified tumours			
Undifferentiated carcinoma	M80203	Carcinoma, undifferentiated (morphologic abnormality)	38549000
Adenocarcinoma, not otherwise specified	M81403	Adenocarcinoma, no subtype (morphologic abnormality)	1187332001

Appendix B TNM and FIGO classification of tumours of the ovary and fallopian tube, and primary peritoneal carcinomas[4]

This classification applies to malignant surface epithelial-stromal tumours, including those of borderline malignancy.

TNM 9	FIGO stage	Descriptor
T – Primary tumour		
TX		Primary tumour cannot be assessed
T0		No evidence of primary tumour
T1	I	Tumour limited to the ovaries or fallopian tube
T1a	IA	Tumour limited to 1 ovary (capsule intact) or fallopian tube, no tumour on ovarian or fallopian tube surface; no malignant cells in ascites or peritoneal washings*
T1b	IB	Tumour limited to both ovaries (capsule intact) or fallopian tubes, no tumour on ovarian or fallopian tube surface; no malignant cells in ascites or peritoneal washings
T1c	IC	Tumour limited to 1 or both ovaries or fallopian tubes with any of the 3 criteria below:
T1c1	IC1	Surgical spill
T1c2	IC2	Capsule ruptured before surgery or tumour on ovarian or fallopian tube surface
T1c3	IC3	Malignant cells in ascites or peritoneal washings
T2	II	Tumour involves 1 or both ovaries or fallopian tubes with pelvic extension (below the pelvic brim) or primary peritoneal carcinoma
T2a	IIA	Extension and/or implants on uterus and/or fallopian tube(s) and/or ovaries
T2b	IIB	Extension to other pelvic tissues, including bowel serosa within the pelvis
T3 and/or N1	III	Tumour involves 1 or both ovaries or fallopian tubes or primary peritoneal carcinoma with microscopically confirmed peritoneal metastases outside the pelvis and/or regional lymph node metastasis (includes liver capsular metastasis)
T3a	IIIA2	Microscopic peritoneal metastasis beyond the pelvis, with or without retroperitoneal lymph node involvement

T3b	IIIB	Macroscopic peritoneal metastasis beyond the pelvis, 2 cm or less in greatest dimension, with or without retroperitoneal lymph node involvement, including bowel involvement
T3c	IIIC	Peritoneal metastasis beyond the pelvis more than 2 cm in greatest dimension, with or without retroperitoneal lymph node involvement
M1	IV	Distant metastasis (excludes peritoneal and liver capsular metastasis, includes inguinal lymph nodes and lymph nodes outside the peritoneal cavity)
M1a	IVA	Pleural effusion with positive cytology
M1b	IVB	Parenchymal metastasis and metastasis to extra-abdominal organs
N – Regional lymph nodes**		
NX		Regional lymph nodes cannot be assessed
N0		No regional lymph node metastasis
CN1		Regional lymph node metastasis
N1	IIIA1	Retroperitoneal lymph node metastasis only
N1a	IIIA1(i)	Lymph node metastasis not more than 10 mm in greatest dimension
N1b	IIIA1(ii)	Lymph node metastasis more than 10 mm in greatest dimension
M – Distant metastasis***		
		Distant metastasis cannot be assessed
		No distant metastasis
M1	IV	Distant metastasis (excludes peritoneal metastasis)
M1a	IVA	Pleural effusion with positive cytology
M1b	IVB	Parenchymal metastasis and metastasis to extra-abdominal organs (including inguinal lymph nodes and lymph nodes outside the abdominal cavity)

Notes

*STIC alone may be staged as IA/IB tubal carcinoma if limited to 1 or both fallopian tubes, with a note that no ‘invasion’ is present.

** Regional lymph nodes are the hypogastric (obturator), common iliac, external iliac, lateral sacral, para-aortic and retroperitoneal nodes (including intra-abdominal node such as greater omental nodes). Intraomental nodal involvement is regarded as stage IIIC, even in the absence of omental stromal metastasis; involvement of inguinal lymph nodes and nodes outside the abdominal cavity are regarded as stage IVB.

***Liver capsule metastasis is T3/stage III; liver and splenic parenchymal metastases are M1/stage IVB; transmural invasion of the bowel wall with mucosal involvement is classified as M1/stage IVB;[87] and pleural effusions must have positive cytology for confirmation of M1/stage IVA.

Appendix C Guide to use of immunohistochemistry and molecular testing in tubo-ovarian carcinomas

This appendix is intended as a non-exhaustive guide to aid classification of carcinomas of ovarian, tubal and primary peritoneal origin in difficult cases, or in cases of small biopsy specimens.

As in all cases, the general tenets of immunohistochemistry interpretation apply. One should always use immunostains as part of a panel and know the normal staining pattern and compartment of the cells that should be positive. Internal controls are mandatory, especially in cases when looking for loss of expression (e.g. MMR immunohistochemistry, null pattern p53 staining). In general, diagnosis should not be based on the result of a single immunostain but should always be based primarily on morphology, supported by ancillary tests. Unexpected positive and negative staining reactions may occur, and results should always be interpreted in conjunction with the clinical, radiological and morphological features as part of a multidisciplinary approach.

High-grade ovarian carcinomas

In some cases, it may be difficult to differentiate between high-grade endometrioid and high-grade serous carcinomas (HGSCs). Furthermore, HGSCs may contain large areas with clear cell morphology.

A combination of diffuse WT1 positivity and mutant-type p53 immunostaining is corroborative of a diagnosis of HGSC, while negative or only focal WT1 expression and wild-type p53 immunoreactivity would suggest endometrioid carcinoma. It should be noted, however, that WT1 positivity is more common in endometrioid adenocarcinoma of the ovary than in the uterus (up to 14%)[84] and thus correlation with morphology is required. WT1 expression with an abnormal p53 immunophenotype may occasionally be seen in endometrioid carcinoma, especially when grade 3,[87] although it is imperative to exclude the pseudoendometrioid pattern of HGSC by carefully searching for areas of high-grade nuclear atypia. The presence of other signs corroborating an endometrioid subtype, such as squamous and/or mucinous differentiation, is helpful[39,48] and other softer signs, such as background endometriosis, may also assist in the diagnosis. In addition, p16 staining is often diffusely (‘block’) positive in HGSC, but it only shows patchy expression in endometrioid carcinoma.[88] Oestrogen receptor (ER) expression is not helpful in

distinguishing serous from endometrioid histotypes, as many HGSCs of tubo-ovarian origin are diffusely ER positive.

Clear cell carcinomas generally show a wild-type p53 pattern and Napsin A positivity, and are negative for Wilms tumour 1 (WT1), ER and progesterone receptor (PR), although a minor proportion display a mutant p53 staining pattern associated with *TP53* mutations.[89,90]

The use of MMR immunohistochemistry may aid diagnosis,[11] as well as provide prognostic information, identifying patients who may require genetic counselling, and the opportunity for future therapeutic options such as immunotherapy. The absence of expression of 1 or more of the proteins MLH1, PMS2, MSH2 or MSH6 indicates high microsatellite instability and is corroborative of a diagnosis of endometrioid or clear cell carcinoma rather than serous carcinoma (which have different underlying molecular pathways). Interpretation of MMR immunohistochemistry may be complicated by aberrant or weak staining rather than complete loss of expression in some instances, similar to the patterns of staining observed in endometrial tumours; extensive guidance has been provided by the British Association of Gynaecological Pathologists.[91]

High-grade versus low-grade serous carcinoma

This may occasionally be problematic in a biopsy specimen. HGSC shows a mutant p53 immunophenotype in approximately 95% of cases, which is the most helpful distinguishing feature. Other helpful immunostains include p16 (which often shows diffuse positive staining in HGSC) and Ki67 (which should be moderate to high in HGSC and show much lower proliferation indices in low-grade serous carcinoma). WT1 will be positive in both subtypes. ER testing is unhelpful in this situation.

Mucinous carcinomas: Differentiation between primary and metastatic

Differentiation between primary and metastatic mucinous carcinoma is important as it has significant prognostic implications but may be difficult based on immunohistochemistry alone. This is because intestinal-type primary mucinous ovarian carcinomas have an enteric phenotype and may express markers such as CDX2 and CA19.9. Correlation with clinical and radiological features, together with morphological findings such as extensive destructive stromal invasion or pseudomyxoma ovarii, is therefore imperative. Large size and unilaterality would favour an ovarian over an extra-ovarian primary site.

In addition, a broad panel of immunohistochemistry may assist in distinguishing primary ovarian mucinous tumours (borderline and invasive) from metastases; this may include CK7, CK20, ER, CDX2, SATB2, SMAD4 (DPC4) and p16. CK7 positivity with only focal or no staining for CK20, CDX2 or SATB2 would favour an ovarian primary, while strong and diffuse CK20, CDX2 and/or SATB2 immunostaining would raise the possibility of a colorectal metastasis to the ovary. The use of immunohistochemistry to distinguish primary ovarian mucinous carcinoma from metastatic adenocarcinoma of upper gastrointestinal origin (pancreatic, hepatobiliary, gastric) is limited. DPC4 is deleted in approximately 50% of pancreatic adenocarcinomas; loss of expression of this marker is very helpful as the vast majority of primary ovarian carcinomas show retention of DPC4 expression.

Although unusual, metastatic cervical adenocarcinoma may mimic a primary mucinous borderline tumour or carcinoma. p16 block positivity is highly unusual in primary ovarian mucinous neoplasms and raises the possibility of spread from an occult or previously diagnosed human papillomavirus-associated cervical primary.

Reassigning seromucinous carcinomas

As described above, seromucinous carcinoma has been removed from the WHO 2020 classification. The majority of these can be reclassified as endometrioid carcinoma (with mucinous differentiation) using a combination of morphological and immunophenotypic assessment. Extensive immunopositivity for WT1 is consistent with a diagnosis of low-grade serous carcinoma. Immunohistochemistry for p53 and ER will not be helpful for distinction between these 2 subtypes, as both show wild-type staining for p53 and ER positivity. Immunohistochemistry for MMR proteins may be useful for diagnosis of endometrioid adenocarcinoma.

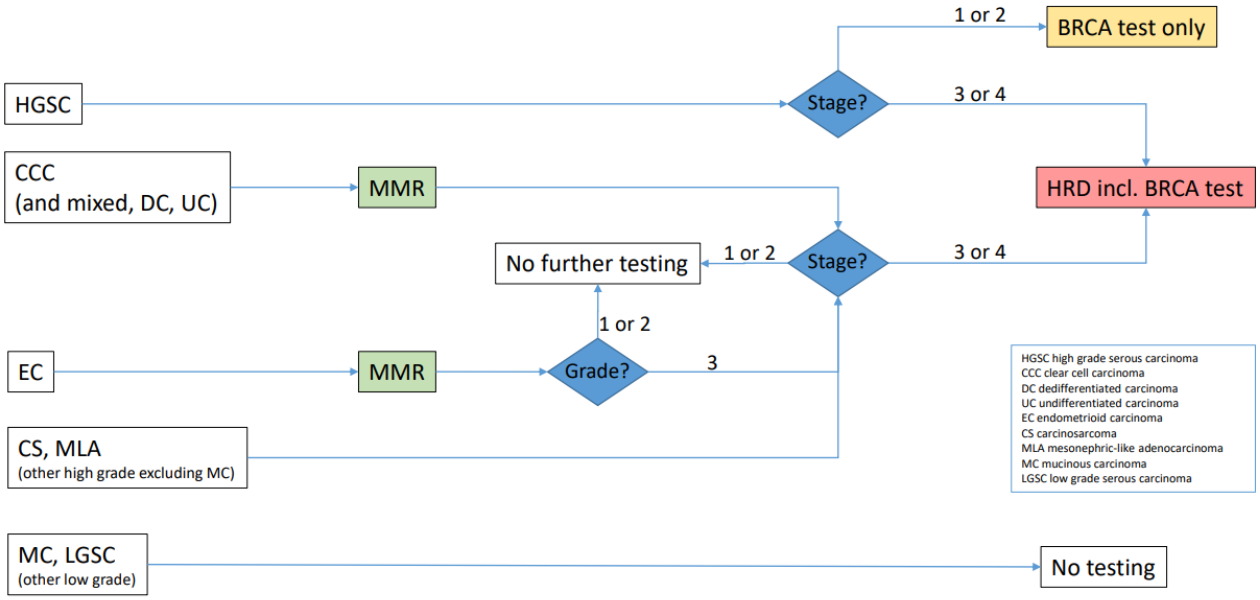
Seromucinous borderline tumours are still considered to represent a distinct entity and should be diagnosed appropriately. As they often arise in a background of endometriosis, the presence of other components such as clear cell carcinoma as a component of a mixed carcinoma should also be excluded, especially as endometrioid adenocarcinoma/clear cell carcinoma appears to be the most common combination in mixed tumours.[47]

Molecular testing

In the UK, homologous recombination deficiency (HRD) testing, which includes *BRCA1/2* mutational analysis, is recommended for patients with newly diagnosed advanced (FIGO

stage III or IV) high-grade ovarian, fallopian tube or primary peritoneal carcinoma, and in those with platinum-sensitive relapsed HGSC (Figure C1). Tumour *BRCA* testing should be performed in all cases of HGSC irrespective of FIGO stage.

Figure C1: Flowchart for MMR/molecular testing.



Although currently authorised for endometrial cancer, testing for mutations in *POLE* and in those genes involved in MMR deficiency, including testing for *MLH1* promoter hypermethylation, are not currently defined in the NHS England test directory for ovarian cancer.[92]

Ovarian endometrioid and clear cell carcinomas differ from those in the endometrium in that the proportion of *POLE* mutant tumours is lower (approximately 5%). There are fewer studies of application of TCGA molecular subgroups in the ovary than endometrium, generally confined to non-serous subtypes, but the data is conflicting: a systematic review of 4 studies shows no significant difference between progression-free survival for the MMR deficient (MMRd) and no specific molecular profile (NSMP) subgroups; while other studies show more separation between groups, they still demonstrate a worse survival for the *POLE* mutant and MMRd subgroups than seen in endometrial tumours.[41–46]

Appendix D Reporting proforma for ovarian, tubal and primary peritoneal carcinomas

Surname: ..... Forenames: .....Date of birth: .....
Patient identifier (CHI/NHS no): ..... Hospital:.....Hospital no: .....
Date of surgery: ..... Date/time of receipt:..... Date of reporting: .....
Report no: ..... Pathologist: .....Surgeon: .....

Prior chemotherapy†

No chemotherapy required ☐ Prior chemotherapy administered ☐ Not known ☐

Specimen type† (select all that apply)

Right ovary ☐ Right ovarian cystectomy ☐ Right fallopian tube ☐

Left ovary ☐ Left ovarian cystectomy ☐ Left fallopian tube ☐

Uterus ☐ Cervix ☐ Omentum ☐

Peritoneal biopsies ☐ Peritoneal washings/ascitic fluid ☐

Lymph nodes (specify site/s) …….....……..…… ☐

Other e.g. bowel, bladder, appendix (specify) …….....…… ☐

Specimen integrity (required only if ovary(ies)/fallopian tubes are submitted)

Right ovary†		**Left ovary†**	
Ovarian capsule intact	☐	Ovarian capsule intact	☐
Ovarian capsule ruptured	☐	Ovarian capsule ruptured	☐
Tumour on surface	☐	Tumour on surface	☐
Fragmented specimen	☐	Fragmented specimen	☐
Other ……	☐	Other ……	☐
Right fallopian tube		**Left fallopian tube**	
Serosa intact	☐	Serosa intact	☐
Serosa ruptured	☐	Serosa ruptured	☐

Tumour on serosal surface	□	Tumour on serosal surface	□
Fragmented specimen	□	Fragmented specimen	□
Other……	□	Other……	□

Macroscopic tumour site (select all that apply)

Right ovary	□	Right fallopian tube	□	Left fallopian tube	□
Left ovary	□	Fimbrial	□	Fimbrial	□
Peritoneum	□	Non-fimbrial	□	Non-fimbrial	□
Omentum	□				□

Other (specify) □ ……

Indeterminate □

Macroscopic description of omentum (required only if omentum submitted)

Omentum dimensions …… mm x …… mm x …… mm

Omental involvement Involved □ Not involved □

Maximum dimension of largest deposit …… mm

Histological tumour type and grade†

(Note: If chemotherapy has been administered, the grading may need to be based on the pre-chemotherapy biopsy.)

High grade serous carcinoma □

Low grade serous carcinoma □

Endometrioid carcinoma

G1: Well differentiated	□	G3: Poorly differentiated	□
G2: Moderately differentiated	□	GX: Cannot be graded	□

Clear cell carcinoma

High grade □

Carcinosarcoma

High grade □

Undifferentiated carcinoma

High grade □

Mucinous carcinoma

G1: Well differentiated □ G3: Poorly differentiated □

G2: Moderately differentiated □ GX: Cannot be graded □

Mixed epithelial types □

Other □

Specify (if other or mixed epithelial types): ……

Borderline tumour

Present □ Absent □

Histological tumour type: ……

Serous tubal intraepithelial carcinoma (STIC) (required only if fallopian tube(s) are submitted)

Right fallopian tube		**Left fallopian tube**	
Present – fimbrial	□	Present – fimbrial	□
Present – non-fimbrial	□	Present – non-fimbrial	□
Not identified	□	Not identified	□
Cannot be assessed	□	Cannot be assessed	□

Histological sites of tumour involvement

Right ovary†

Not involved	□	Cannot be assessed	□
Involved	□	Not applicable	□

Left ovary†

Not involved	□	Cannot be assessed	□

Involved ☐ Not applicable ☐

Right ovarian capsule/surface†

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Left ovarian capsule/surface†

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Right fallopian tube†

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Left fallopian tube†

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Uterus

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Site(s):

Myometrium ☐ Endometrium ☐ Cervix ☐

Omentum†

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Level of involvement:

Macroscopic ☐ Microscopic ☐

Peritoneum (including uterine serosa)†

Not involved ☐ Cannot be assessed ☐

Involved ☐ Not applicable ☐

Site(s):

Pelvis (specify site/s) □ ……

Abdomen (specify site/s) □ ……

Other involved organ(s)/site(s) (specify): ……

Peritoneal cytology†

Negative □ Indeterminate □

Positive □ Not received □

Lymph node status†

Not submitted □ Not involved □ Involved □

Regional

Left pelvic

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Right pelvic

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Para-aortic

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Maximum dimension of largest deposit in regional node ……. mm

Non-regional

Site 1

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Site 2

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

**In some cases, it may not be possible to record the actual number of nodes owing to fragmentation of the specimen.

Site of tumour†

Primary tumour, ovary □

Primary tumour, peritoneum □

Primary tumour, fallopian tube □

Undesignated: site of primary tumour cannot be assessed □

Mismatch repair status

Proficient □

Deficient □

Pattern of loss if deficient: □

Comments:

Provisional FIGO stage† …… (may change following MDTM discussion)

SNOMED codes†: T…… M……

Pathologist: …… Date: ……

†Data items that are currently part of the Cancer Outcomes and Services Dataset (COSD) pathology version 5.

Appendix E Reporting proforma for ovarian, tubal and primary peritoneal borderline tumours

Surname: ..... Forenames: .....Date of birth: .....
Patient identifier (CHI/NHS no): ..... Hospital:.....Hospital no: .....
Date of surgery: ..... Date/time of receipt:..... Date of reporting: .....
Report no: ..... Pathologist: .....Surgeon: .....

Specimen type† (select all that apply)

Right ovary	☐	Right ovarian cystectomy	☐	Right fallopian tube	☐
Left ovary	☐	Left ovarian cystectomy	☐	Left fallopian tube	☐
Uterus	☐	Cervix	☐	Omentum	☐
Peritoneal biopsies	☐	Peritoneal washings/ascitic fluid			☐

Lymph nodes (specify site/s): ……

Other e.g. bowel, bladder, appendix (specify): ……

Specimen integrity (required only if ovary[ies]/fallopian tubes are submitted)

Right ovary†		**Left ovary†**	
Ovarian capsule intact	☐	Ovarian capsule intact	☐
Ovarian capsule ruptured	☐	Ovarian capsule ruptured	☐
Tumour on surface	☐	Tumour on surface	☐
Fragmented specimen	☐	Fragmented specimen	☐
Other ……		Other ……	

Right fallopian tube		**Left fallopian tube**	
Serosa intact	☐	Serosa intact	☐
Serosa ruptured	☐	Serosa ruptured	☐
Tumour on serosal surface	☐	Tumour on serosal surface	☐
Fragmented specimen	☐	Fragmented specimen	☐
Other……		Other……	

Macroscopic tumour site (select all that apply)

Right ovary	☐	Right fallopian tube	☐	Left fallopian tube	☐
Left ovary	☐	Fimbrial	☐	Fimbrial	☐
Peritoneum	☐	Non-fimbrial	☐	Non-fimbrial	☐
Omentum	☐				☐

Other (specify): ……

Indeterminate ☐

Macroscopic description of omentum (required only if omentum submitted)

Omentum dimensions …… mm x …… mm x …… mm

Omental involvement Involved □ Not involved □

Maximum dimension of largest deposit …… mm

Histological tumour type and grade†

(Note: If chemotherapy has been administered, the grading may need to be based on the pre-chemotherapy biopsy.)

Serous	□	Mucinous	□
Serous micropapillary variant	□	Endometrioid	□
		Clear cell	□
Mixed epithelial types	□	Other	□

Specify (if other or mixed epithelial types): ……

Microinvasion

Present □ Absent □

Implants for serous and seromucinous borderline tumour

Non-invasive implants

Not identified □

Present, Epithelial □

Present, Desmoplastic □

If present, Pelvic □ Abdominal □

Invasive implants/Extra-ovarian low-grade serous carcinoma

Not identified □

Present □

If present, Pelvic □ Abdominal □

Indeterminate

Not identified □

Present □

If present, Pelvic □ Abdominal □

Histological sites of tumour involvement

Right ovary†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Left ovary†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Right ovarian capsule/surface†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Left ovarian capsule/surface†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Right fallopian tube†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Left fallopian tube†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Uterus

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Site(s):

Myometrium □ Endometrium □ Cervix □

Omentum†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Level of involvement:

Macroscopic □ Microscopic □

Peritoneum (including uterine serosa)†

Not involved □ Cannot be assessed □

Involved □ Not applicable □

Site(s):

Pelvis (specify site/s) □

Abdomen (specify site/s) □

Other involved organ(s)/site(s) (specify): ……

Peritoneal cytology†

Negative □ Indeterminate □

Positive □ Not received □

Lymph node status†

Not submitted □ Not involved □ Involved □

Regional

Left pelvic

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Right pelvic

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Para-aortic

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Non-regional

Site 1

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

Site 2

Number of lymph nodes examined** ……

Number of positive lymph nodes** ……

** In some cases, it may not be possible to record the actual number of nodes owing to fragmentation of the specimen.

Site of tumour†

Primary tumour, ovary □

Primary tumour, peritoneum □

Primary tumour, fallopian tube □

Undesignated: site of primary tumour cannot be assessed □

Comments:

Provisional FIGO stage† …… (may change following MDTM discussion)

SNOMED codes†: T…… M……

Pathologist: …… **Date:** ……

† Data items that are currently part of the Cancer Outcomes and Services Dataset (COSD) pathology version 5.

Appendix F Reporting proforma for ovarian, tubal and primary peritoneal carcinomas in list format

Element name	Values	Implementation notes
Prior chemotherapy	Single selection value list: • No chemotherapy required • Prior chemotherapy administered • Not known	
Specimen type	Multiple selection value list: • Right ovary • Right ovarian cystectomy • Right fallopian tube • Left ovary • Left ovarian cystectomy • Left fallopian tube • Uterus • Cervix • Omentum • Peritoneal biopsies • Peritoneal washings/ascitic fluid • Lymph nodes • Other	
Specimen type, Lymph nodes, specify site/s	Free text	Only applicable if 'Specimen type, Lymph nodes' is selected.
Specimen type, Other, specify	Free text	Only applicable if 'Specimen type, Other' is selected.
Specimen integrity, Right ovary	Multiple selection value list: • Ovarian capsule intact • Ovarian capsule ruptured • Tumour on surface	Only applicable if 'Specimen type, Right ovary' or 'Specimen type, Right ovarian cystectomy' is selected.

	• Fragmented specimen • Other	
Specimen integrity, Right ovary, Other	Free text	Only applicable if 'Specimen integrity, Right ovary, Other' is selected.
Specimen integrity, Left ovary	Multiple selection value list: • Ovarian capsule intact • Ovarian capsule ruptured • Tumour on surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Left ovary' or 'Specimen type, Left ovarian cystectomy' is selected.
Specimen integrity, Left ovary, Other	Free text	Only applicable if 'Specimen integrity, Left ovary, Other' is selected.
Specimen integrity, Right fallopian tube	Multiple selection value list: • Serosa intact • Serosa ruptured • Tumour on serosal surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Right fallopian tube' is selected.
Specimen integrity, Right fallopian tube, Other	Free text	Only applicable if 'Specimen integrity, Right fallopian tube, Other' is selected.
Specimen integrity, Left fallopian tube	Multiple selection value list: • Serosa intact • Serosa ruptured • Tumour on serosal surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Left fallopian tube' is selected.
Specimen integrity, Left fallopian tube, Other	Free text	Only applicable if 'Specimen integrity, Left fallopian tube, Other' is selected.
Macroscopic tumour site	Multiple selection value list:	

	• Right ovary • Right fallopian tube • Left ovary • Left fallopian tube • Peritoneum • Omentum • Other • Indeterminate	
Macroscopic tumour site, Right fallopian tube	Multiple selection value list: • Fimbrial • Non-fimbrial	Only applicable if 'Macroscopic tumour site, Right fallopian tube' is selected.
Macroscopic tumour site, Left fallopian tube	Multiple selection value list: • Fimbrial • Non-fimbrial	Only applicable if 'Macroscopic tumour site, Left fallopian tube' is selected.
Macroscopic tumour site, Other	Free text	Only applicable if 'Macroscopic tumour site, Other' is selected.
Macroscopic description of omentum, Omentum dimension 1	Size in mm	
Macroscopic description of omentum, Omentum dimension 2	Size in mm	
Macroscopic description of omentum, Omentum dimension 3	Size in mm	
Macroscopic description of omentum, Omental involvement	Single selection value list: • Involved • Not involved	
Macroscopic description of omentum, Maximum dimension of largest deposit	Size in mm	
Histological tumour type and grade	Single selection value list: • Serous carcinoma, low grade • Serous carcinoma, high grade • Serous carcinoma, cannot be graded • Endometrioid carcinoma, G1: Well differentiated • Endometrioid carcinoma, G2:	

	Moderately differentated • Endometrioid carcinoma, G3: Poorly differentiated • Endometrioid carcinoma, GX: Cannot be graded • Clear cell carcinoma, high grade • Carcinosarcoma, high grade • Undifferentiated carcinoma, high grade • Mucinous carcinoma, G1 • Mucinous carcinoma, G2 • Mucinous carcinoma, G3 • Mucinous carcinoma, GX • Mixed epithelial subtypes • Other	
Histological tumour type and grade, Specify	Free text	Only applicable if 'Histological type and grade, Mixed epithelial types' or 'Histological type and grade, Other' is selected.
Borderline tumour	Single selection value list: • Present • Absent	
Borderline tumour, Histological tumour type	Free text	Only applicable if 'Borderline tumour, Present' is selected.
Serous tubal intraepithelial carcinoma (STIC), Right fallopian tube	Single selection value list: • Present – fimbrial • Present – non-fimbrial • Not identified • Cannot be assessed	Only applicable if 'Specimen type' includes 'Right fallopian tube' and 'Histological tumour type and grade, Serous carcinoma, High grade' is selected.

Serous tubal intraepithelial carcinoma (STIC), Left fallopian tube	Single selection value list: • Present – fimbrial • Present – non-fimbrial • Not identified • Cannot be assessed	Only applicable if 'Specimen type' includes 'Left fallopian tube' and 'Histological tumour type and grade, Serous carcinoma, High grade' is selected.
Histological sites of tumour involvement, Right ovary	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Right ovary' or 'Right ovarian cystectomy'.
Histological sites of tumour involvement, Left ovary	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Left ovary' or 'Left ovarian cystectomy'.
Histological sites of tumour involvement, Right ovarian capsule/surface	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Right ovary' or 'Right ovarian cystectomy'.
Histological sites of tumour involvement, Left ovarian capsule/surface	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Left ovary' or 'Left ovarian cystectomy'.
Histological sites of tumour involvement, Right fallopian tube	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Right fallopian tube'.
Histological sites of tumour involvement, Left fallopian tube	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Left fallopian tube'.
Histological sites of tumour involvement, Uterus	Single selection value list: • Not involved • Involved	Not applicable if 'Specimen type' does not include 'Uterus'.

	• Cannot be assessed • Not applicable	
Histological sites of tumour involvement, Uterus, Site(s)	Multiple selection value list: • Myometrium • Endometrium • Cervix	Only applicable if 'Histological sites of tumour involvement, Uterus, Involved' is selected.
Histological sites of tumour involvement, Omentum	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Omentum'.
Histological sites of tumour involvement, Omentum, Level of involvement	Single selection value list: • Macroscopic • Microscopic	Only applicable if 'Histological sites of tumour involvement, Omentum, Involved' is selected.
Histological sites of tumour involvement, Peritoneum (including uterine serosa)	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Peritoneal biopsies'.
Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s)	Multiple selection value list: • Pelvis • Abdomen	Only applicable if 'Histological sites of tumour involvement, Peritoneum (including uterine serosa), Involved' is selected.
Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s), Pelvis, specify site/s	Free text	Only applicable if 'Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s), Pelvis' is selected.
Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s), Abdomen, specify site/s	Free text	Only applicable if 'Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s), Abdomen' is selected.
Histological sites of tumour involvement, Other involved organ(s)/site(s)	Free text	

Peritoneal cytology	Single selection value list: • Negative • Positive • Indeterminate • Not received	
Lymph node status	Single selection value list: • Not submitted • Not involved • Involved	
Regional lymph nodes, Left pelvic, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Regional lymph nodes, Left pelvic, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Regional lymph nodes, Left pelvic, Number of lymph nodes examined' is <1.
Regional, Right pelvic, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Regional lymph nodes, Right pelvic, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Regional lymph nodes, Right pelvic, Number of lymph nodes examined' is <1.
Regional lymph nodes, Para-aortic, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Regional lymph nodes, Para-aortic, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Regional lymph nodes, Para-aortic, Number of lymph nodes examined' is <1.

Maximum dimension of largest deposit in regional node	Size in mm	Not applicable if 'Lymph node status, Not submitted' is selected.
Non-regional lymph node, Site 1	Free text	Not applicable if 'Lymph node status, Not submitted' is selected.
Non-regional lymph nodes, Site 1, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Non-regional lymph nodes, Site 1, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Non-regional lymph nodes, Site 1, Number of lymph nodes examined' is <1.
Non-regional lymph node, Site 2	Free text	Not applicable if 'Lymph node status, Not submitted' is selected.
Non-regional lymph nodes, Site 2, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Non-regional lymph nodes, Site 2, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Non-regional lymph nodes, Site 2, Number of lymph nodes examined' is <1.
Site of tumour	Single selection value list: • Primary tumour, ovary • Primary tumour, fallopian tube • Primary tumour, peritoneum • Undesignated: site of primary tumour cannot be assessed	
Mismatch repair status	Single selection value list: • Proficient	

	• Deficient • Pattern of loss deficient	
Comments	Free text	
Provisional FIGO stage	Single selection value list: • IA • IB • IC1 • IC2 • IC3 • IIA • IIB • IIIA1(i) • IIIA1(ii) • IIIA2 • IIIB • IIIC • IVA • IVB	
SNOMED T code	May have multiple codes. Look up from SNOMED tables.	
SNOMED M code	May have multiple codes. Look up from SNOMED tables.	

Appendix G Reporting proforma for ovarian, tubal and primary peritoneal borderline tumours in list format

Element name	Values	Implementation notes
Specimen type	Multiple selection value list: • Right ovary • Right ovarian cystectomy • Right fallopian tube • Left ovary • Left ovarian cystectomy • Left fallopian tube • Uterus • Cervix • Omentum • Peritoneal biopsies • Peritoneal washings/ascitic fluid • Lymph nodes • Other	
Specimen type, Lymph nodes, specify site/s	Free text	Only applicable if 'Specimen type, Lymph nodes' is selected.
Specimen type, Other, specify	Free text	Only applicable if 'Specimen type, Other' is selected.
Specimen integrity, Right ovary	Multiple selection value list: • Ovarian capsule intact • Ovarian capsule ruptured • Tumour on surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Right ovary' or 'Specimen type, Right ovarian cystectomy' is selected.
Specimen integrity, Right ovary, Other	Free text	Only applicable if 'Specimen integrity, Right ovary, Other' is selected.

Specimen integrity, Left ovary	Multiple selection value list: • Ovarian capsule intact • Ovarian capsule ruptured • Tumour on surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Left ovary' or 'Specimen type, Left ovarian cystectomy' is selected.
Specimen integrity, Left ovary, Other	Free text	Only applicable if 'Specimen integrity, Left ovary, Other' is selected.
Specimen integrity, Right fallopian tube	Multiple selection value list: • Serosa intact • Serosa ruptured • Tumour on serosal surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Right fallopian tube' is selected.
Specimen integrity, Right fallopian tube, Other	Free text	Only applicable if 'Specimen integrity, Right fallopian tube, Other' is selected.
Specimen integrity, Left fallopian tube	Multiple selection value list: • Serosa intact • Serosa ruptured • Tumour on serosal surface • Fragmented specimen • Other	Only applicable if 'Specimen type, Left fallopian tube' is selected.
Specimen integrity, Left fallopian tube, Other	Free text	Only applicable if 'Specimen integrity, Left fallopian tube, Other' is selected.
Macroscopic tumour site	Multiple selection value list: • Right ovary • Right fallopian tube • Left ovary • Left fallopian tube • Peritoneum	

	• Omentum • Other • Indeterminate	
Macroscopic tumour site, Right fallopian tube	Multiple selection value list: • Fimbrial • Non-fimbrial	Only applicable if 'Macroscopic tumour site, Right fallopian tube' is selected.
Macroscopic tumour site, Left fallopian tube	Multiple selection value list: • Fimbrial • Non-fimbrial	Only applicable if 'Macroscopic tumour site, Left fallopian tube' is selected.
Macroscopic tumour site, Other	Free text	Only applicable if 'Macroscopic tumour site, Other' is selected.
Macroscopic description of omentum, Omentum dimension 1	Size in mm	
Macroscopic description of omentum, Omentum dimension 2	Size in mm	
Macroscopic description of omentum, Omentum dimension 3	Size in mm	
Macroscopic description of omentum, Omental involvement	Single selection value list: • Involved • Not involved	
Macroscopic description of omentum, Maximum dimension of largest deposit	Size in mm	
Histological tumour type and grade	Single selection value list: • Serous • Serous micropapillary variant • Mucinous • Endometrioid • Clear cell • Mixed epithelial subtypes • Other	
Histological tumour type and grade, Specify	Free text	Only applicable if 'Histological tumour type and grade, Mixed epithelial types' or 'Histological tumour type and grade, Other' is selected.

Microinvasion	Single selection value list: • Present • Absent	
Implants for serous and seromucinous borderline tumour, Non-invasive implants	Single selection value list: • Not identified • Present, Epithelial • Present, Desmoplastic	Only applicable if 'Histological tumour type and grade, Serous' or 'Histological tumour type and grade, Serous micropapillary variant' is selected.
Implants for serous and seromucinous borderline tumour, Non-invasive implants, If present	Multiple selection value list: • Pelvic • Abdominal	Only applicable if 'Non-invasive implants, Present, Epithelial' or 'Non-invasive implants, Present, Desmoplastic' is selected.
Implants for serous and seromucinous borderline tumour, Invasive implants/Extra-ovarian low-grade serous carcinoma	Single selection value list: • Not identified • Present	Only applicable if 'Histological tumour type and grade, Serous' or 'Histological tumour type and grade, Serous micropapillary variant' is selected.
Implants for serous and seromucinous borderline tumour, Invasive implants/Extra-ovarian low-grade serous carcinoma, If present	Multiple selection value list: • Pelvic • Abdominal	Only applicable if 'Invasive implants/Extra-ovarian low-grade serous carcinoma, Present' is selected.
Implants for serous and seromucinous borderline tumour, Indeterminate implants	Single selection value list: • Not identified • Present	Only applicable if 'Histological tumour type and grade, Serous' or 'Histological tumour type and grade, Serous micropapillary variant' is selected.
Implants for serous and seromucinous borderline tumour, Indeterminate implants, If present	Multiple selection value list: • Pelvic • Abdominal	Only applicable if 'Indeterminate implants, Present' is selected.
Histological sites of tumour involvement, Right ovary	Single selection value list: • Not involved	Not applicable if 'Specimen type' does not include 'Right

	• Involved • Cannot be assessed • Not applicable	ovary' or 'Right ovarian cystectomy'.
Histological sites of tumour involvement, Left ovary	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Left ovary' or 'Left ovarian cystectomy'.
Histological sites of tumour involvement, Right ovarian capsule/surface	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Right ovary' or 'Right ovarian cystectomy'.
Histological sites of tumour involvement, Left ovarian capsule/surface	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Left ovary' or 'Left ovarian cystectomy'.
Histological sites of tumour involvement, Right fallopian tube	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Right fallopian tube'.
Histological sites of tumour involvement, Left fallopian tube	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Left fallopian tube'.
Histological sites of tumour involvement, Uterus	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Uterus'.
Histological sites of tumour involvement, Uterus, Site(s)	Multiple selection value list: • Myometrium • Endometrium • Cervix	Only applicable if 'Histological sites of tumour involvement, Uterus, Involved' is selected.
Histological sites of tumour involvement, Omentum	Single selection value list: • Not involved	Not applicable if 'Specimen type' does

	• Involved • Cannot be assessed • Not applicable	not include 'Omentum'.
Histological sites of tumour involvement, Omentum, Level of involvement	Single selection value list: • Macroscopic • Microscopic	Only applicable if 'Histological sites of tumour involvement, Omentum, Involved' is selected.
Histological sites of tumour involvement, Peritoneum (including uterine serosa)	Single selection value list: • Not involved • Involved • Cannot be assessed • Not applicable	Not applicable if 'Specimen type' does not include 'Peritoneal biopsies'.
Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s)	Multiple selection value list: • Pelvis • Abdomen	Only applicable if 'Histological sites of tumour involvement, Peritoneum (including uterine serosa), Involved' is selected.
Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s), Pelvis, specify site/s	Free text	Only applicable if 'Histological involvement, Peritoneum (including uterine serosa), Site(s), Pelvis' is selected.
Histological sites of tumour involvement, Peritoneum (including uterine serosa), Site(s), Abdomen, specify site/s	Free text	Only applicable if 'Histological involvement, Peritoneum (including uterine serosa), Site(s), Abdomen' is selected.
Histological sites of tumour involvement, Other involved organ(s)/site(s)	Free text	
Peritoneal cytology	Single selection value list: • Negative • Positive • Indeterminate • Not received	
Lymph node status	Single selection value list: • Not submitted • Not involved • Involved	

Lymph node status Regional, Left pelvic, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status Regional, Left pelvic, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Lymph node status, Regional, Left pelvic, Number of lymph nodes examined' is <1.
Lymph node status, Regional, Right pelvic, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status Regional, Right pelvic, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Lymph node status, Regional, Right pelvic, Number of lymph nodes examined' is <1.
Lymph node status, Regional, Para-aortic, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status, Regional, Para-aortic, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Lymph node status, Regional, Para-aortic, Number of lymph nodes examined' is <1.
Lymph node status, Non-regional, Site 1	Free text	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status, Non-regional, Site 1, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status, Non-regional, Site 1, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Lymph

		node status, Non-regional, Site 1, Number of lymph nodes examined' is <1.
Lymph node status, Non-regional, Site 2	Free text	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status, Non-regional, Site 2, Number of lymph nodes examined	Integer	Not applicable if 'Lymph node status, Not submitted' is selected.
Lymph node status, Non-regional, Site 2, Number of positive lymph nodes	Integer	Not applicable if 'Lymph node status, Not submitted' is selected or 'Lymph node status, Non-regional, Site 2, Number of lymph nodes examined' is <1.
Site of tumour	Single selection value list: • Primary tumour, ovary • Primary tumour, fallopian tube • Primary tumour, peritoneum • Undesignated: site of primary tumour cannot be assessed	
Comments	Free text	
Provisional FIGO stage	Single selection value list: • IA • IB • IC1 • IC2 • IC3 • IIA • IIB • IIIA1(i) • IIIA1(ii) • IIIA2 • IIIB • IIIC	

	• IVA • IVB	
SNOMED T code	May have multiple codes. Look up from SNOMED tables.	
SNOMED M code	May have multiple codes. Look up from SNOMED tables.	

Appendix H Summary table – explanation of grades of evidence

(modified from Palmer K *et al. BMJ* 2008;337:1832)

Grade (level) of evidence	Nature of evidence
Grade A	At least 1 high-quality meta-analysis, systematic review of randomised controlled trials or a randomised controlled trial with a very low risk of bias and directly attributable to the target population or A body of evidence demonstrating consistency of results and comprising mainly well-conducted meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a low risk of bias, directly applicable to the target cancer type.
Grade B	A body of evidence demonstrating consistency of results and comprising mainly high-quality systematic reviews of case-control or cohort studies and high-quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relation is causal and which are directly applicable to the target population or Extrapolation evidence from studies described in A.
Grade C	A body of evidence demonstrating consistency of results and including well-conducted case-control or cohort studies and high-quality case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relation is causal and which are directly applicable to the target population or Extrapolation evidence from studies described in B.
Grade D	Non-analytic studies such as case reports, case series or expert opinion or Extrapolation evidence from studies described in C.
Good practice point (GPP)	Recommended best practice based on the clinical experience of the authors of the writing group.

Appendix I AGREE II guideline monitoring sheet

The cancer datasets of the Royal College of Pathologists comply with the AGREE II standards for good quality clinical guidelines. The sections of this dataset that indicate compliance with each of the AGREE II standards are indicated in the table.

AGREE standard	Section of guideline
Scope and purpose	
1 The overall objective(s) of the guideline is (are) specifically described	Introduction
2 The health question(s) covered by the guideline is (are) specifically described	Introduction
3 The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described	Foreword
Stakeholder involvement	
4 The guideline development group includes individuals from all the relevant professional groups	Foreword
5 The views and preferences of the target population (patients, public, etc.) have been sought	Foreword
6 The target users of the guideline are clearly defined	Introduction
Rigour of development	
7 Systematic methods were used to search for evidence	Foreword
8 The criteria for selecting the evidence are clearly described	Foreword
9 The strengths and limitations of the body of evidence are clearly described	Foreword
10 The methods for formulating the recommendations are clearly described	Foreword
11 The health benefits, side effects and risks have been considered in formulating the recommendations	Foreword and Introduction
12 There is an explicit link between the recommendations and the supporting evidence	2–8
13 The guideline has been externally reviewed by experts prior to its publication	Foreword
14 A procedure for updating the guideline is provided	Foreword
Clarity of presentation	
15 The recommendations are specific and unambiguous	2–8
16 The different options for management of the condition or health issue are clearly presented	2–8
17 Key recommendations are easily identifiable	2–8

Applicability	
18 The guideline describes facilitators and barriers to its application	Foreword
19 The guideline provides advice and/or tools on how the recommendations can be put into practice	Appendices
20 The potential resource implications of applying the recommendations have been considered	Foreword
21 The guideline presents monitoring and/or auditing criteria	9
Editorial independence	
22 The views of the funding body have not influenced the content of the guideline	Foreword
23 Competing interests of guideline development group members have been recorded and addressed	Foreword