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

Standards and datasets for reporting cancers

Dataset for histopathological reporting of primary cutaneous adnexal carcinomas and regional lymph nodes

February 2019

Authors: Dr David Slater, Chesterfield Royal Hospital NHS Foundation Trust
Dr Paul Barrett, County Durham and Darlington NHS Foundation Trust

Unique document number	G127
Document name	Dataset for histopathological reporting of primary cutaneous adnexal carcinomas and regional lymph nodes
Version number	3
Produced by	Dr David Slater is a consultant dermatopathologist and member of the RCPath Specialist Advisory Committee (SAC), co-organiser of the National Specialist Dermatopathology EQA Scheme, member of the British Association of Dermatologists' (BAD) Skin Cancer Clinical Guideline Development Groups, past President of the British Society of Dermatopathology, Chair of the RCPath SAC on Dermatopathology, Chair of RCPath Examiners for the Diploma in Dermatopathology, dermatopathologist member of the Skin Cancer Guidance Development Group for NICE and Deputy Editor of *British Journal of Dermatology.* Dr Paul Barrett is a consultant pathologist and co-opted member of the RCPath SAC, lead for joint RCPath–BAD National Non-melanoma Skin Cancer Audit, Chair of the North of England Cancer Alliance Skin Cancer Expert Reference Group, member of the RCPath Working Group on Cancer Services and representative for RCPath on the International Collaboration on Cancer Reporting Dataset Steering Committee.
Date active	February 2019 (to be implemented within three months)
Date for full revision	February 2022
Comments	This document will replace the 2nd edition first published in 2014. This is to incorporate the *TNM Classification of Malignant Tumours (8th edition)* from the Union for International Cancer Control (UICC) published in 2017. In accordance with the College's pre-publications policy, this document was on the College website for consultation from 6 September to 4 October 2018. Responses and authors' comments are available to view on request. **Dr Brian Rous** **Clinical Lead for Guideline Review (Cellular Pathology)**

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. This guideline has been developed to cover most common circumstances. However, we recognise that guidelines cannot anticipate every pathological specimen type and clinical scenario. Occasional variation 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 D1, D2, E1 and E2) 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. Core data items meet the requirements of professional standards (as defined by the Information Standards Board for Health and Social Care [ISB]) and 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 organisations were consulted during its preparation and approved the dataset:

- British Association of Dermatologists (BAD; member of the RCPath Specialty Advisory Committee on Dermatopathology)
- British Society for Dermatopathology (BSD; member of the RCPath Advisory Committee on Dermatopathology)
- participating members of the National Specialist Dermatopathology External Quality Assessment (NSDEQA) scheme (member of the RCPath Speciality Advisory Committee on Dermatopathology).

This dataset has been constructed taking into account the strong evidence that is contained in, and forms the basis for, the following national and international publications. All publications have widespread national and/or international peer acceptance and reflect the current accepted professional standards and practice in skin cancer:

- Union for International Cancer Control (UICC)[1]
- American Joint Committee on Cancer (AJCC)[2]
- World Health Organization (WHO) Classification of Skin Tumours[3]
- National Institute for Health and Clinical Excellence (NICE) Guidance and Quality Standards on skin cancer and melanoma[4,5]
- NHS Evidence[6]
- Public Health England (PHE) COSD.[7] This relates to the core data items for all skin cancers – a specific dataset for adnexal carcinoma is not yet available. PHE, however, intends to eventually include rare skin cancers in COSD as indicated in the 2011 National Cancer Intelligence Network (NCIN) Data Briefing.
- NHS England Quality Surveillance Programme (QSP; formerly the National Cancer Peer Review Programme)[8]
- Armed Forces Institute of Pathology (AFIP) Atlas of Tumour Pathology (noting AFIP disestablished in 2011 and now under American Registry of Pathology [ARP] Press)[9]
- College of American Pathologists.[10]

Evidence for the revised dataset was obtained from updates to international tumour grading, staging and classification systems and by electronically searching medical literature databases for relevant research evidence, systematic reviews and national or international publications on uterine sarcomas. The level of evidence for the recommendations has been summarised (Appendix F). Unless otherwise stated, the level of evidence corresponds to 'Good practice point (GPP): Recommended best practice based on the clinical experience of the authors of the writing group'. The sections of this dataset that indicate compliance with each of the AGREE II standards are indicated in Appendix G.

No major organisational changes have been identified that would hinder the implementation of the dataset, which is fully integrated with the COSD, and there are no new major financial or work implications arising from the implementation, compared to the previous dataset.

A formal revision cycle for all cancer datasets takes place on a three-yearly basis. However, each year, the College will ask the author of the dataset, in conjunction with the relevant subspecialty adviser to the College, to consider whether or not the dataset needs to be updated or 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 two weeks for members' 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 Clinical Effectiveness department, Lay Governance Group and Working Group on Cancer Services (WGCS) and was placed on the College website for consultation with the membership from 6 September to 4 October 2018. All comments received from the WGCS and membership were addressed by the authors, to the satisfaction of the Chair of the Working Group and Clinical Lead for Guideline Review (Cellular Pathology).

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 Clinical Effectiveness department and are available on request. The authors have declared that there are no conflicts of interest.

1 Introduction

1.1 Target users and health benefits of this guideline

The primary target users of this dataset are consultant and trainee cellular pathologists and biomedical scientists and, on their behalf, the suppliers of information technology products to laboratories. Other target users are clinicians in secondary and primary care within the NHS and members of skin cancer multidisciplinary teams (MDTs). Secondary users are NHS England and NHS Scotland, each involved in quality surveillance, cancer networks, cancer alliances and those involved in skin cancer data collection via the NHS, including PHE and in particular the National Cancer Registration and Analysis Service (NCRAS).

Standardised cancer reporting and MDT working reduce the risk of histological misdiagnosis and help to ensure that clinicians have all of the relevant pathological information required for tumour staging, management and prognosis. The collection of standardised cancer-specific data also provides information for epidemiologists and facilitates international benchmarking and research.

1.2 Purpose of the dataset

This document provides the dataset for the histopathological reporting of cutaneous adnexal carcinomas and replaces the previous edition.

The meticulous diagnosis and reporting of adnexal carcinoma is important because histological parameters play a significant role in defining patient treatment. Similarly, recording of pathological parameters in the dataset has direct implications for the staging and prognosis of individual patients. The use of datasets (and the background information that forms part of the datasets) in the context of the MDT meeting is advocated to optimise decisions related to patient treatment, to facilitate regular audit and review of all aspects of the service, to enable the collection of accurate data for NCRAS and to provide feedback for those caring for patients with cancer. It is important to have robust local mechanisms in place to ensure that the MDT clinical leads and NCRAS are apprised of supplementary or revised histology reports that may affect patient treatment and data collection.

1.3 Changes since the previous edition

1.3.1 Pathological tumour, node and metastases (pTNM) stage

It must be noted, in general and whenever possible, that UICC TNM is the version favoured by NCRAS in the UK. UICC is, in essence, the international custodian of TNM, although it is recognised that the AJCC TNM version, although intended for use in the USA, is also favoured elsewhere. UICC and AJCC are, however, common stakeholders in TNM and ideally both versions should be the same. The staging of adnexal carcinoma in the previous edition of this dataset was, however, based on AJCC TNM 7. The latter was selected at the time by the RCPath for skin cancers because of the high number of errors contained in UICC TNM 7, some of which remained uncorrected in its subsequent supplementary issue.

AJCC TNM 8 has a chapter on staging cutaneous squamous cell carcinoma (cSCC) of head and neck, which also incorporates other non-melanoma skin cancers (NMSC), including basal cell carcinoma (BCC) and adnexal carcinomas but not Merkel cell carcinoma (MCC), as the latter has its own separate chapter. AJCC TNM 8, however, has no staging system for cSCC, BCC and adnexal carcinomas on the remainder of the body. By contrast, UICC TNM 8 has not only a chapter on staging skin carcinoma of the head and neck, but also a staging system for carcinoma of the skin for the remainder of the body (essentially limbs and trunk but excluding the eyelid and genitals). These incorporate the same types of NMSC as AJCC TNM 8; the physical boundary between the two body regions is the acromioclavicular joint anteriorly and the upper aspect of the shoulder blade posteriorly. Accordingly, both AJCC and UICC TNM 8 staging systems have been assessed critically to determine which system should be recommended by the RCPath for national use in the UK and the RCPath skin cancer datasets, in particular by PHE, NCRAS and COSD. The UICC and AJCC TNM 8 staging systems for cutaneous melanoma and MCC are now identical, taking into account subsequent website errata (www.wileyanduicc.com; www.cancerstaging.org). Accordingly, the final decision to use UICC TNM 8 and not AJCC TNM 8 has been based on the staging of NMSC.

In general, the terms microscopic and macroscopic have, where appropriate, been replaced in TNM 8 by the terms ‘clinically occult’ and ‘clinically detected’, respectively.

pT category

The pT category for both UICC and AJCC TNM 8 adnexal carcinoma is entirely different from UICC and AJCC TNM 7.

pT subcategories for T1, T2 and T3 are now defined by stratification of the maximum tumour dimension at 20 mm or 40 mm. T1 and T2 can be upstaged to T3 by the presence of one or more risk factors comprising specifically defined perineural invasion or deep invasion representing either a tumour thickness/depth >6 mm* and/or invasion beyond/further than the subcutaneous fat. Hence, they are used in this dataset. T3 is also defined by minor bone

erosion, T4a by gross cortical/marrow invasion and T4b by axial skeleton/skull base or foraminal invasion.

This has required a new core entry if deep invasion is present and, if so, if the BCC thickness/depth is >6 mm or the tumour extends beyond the subcutaneous fat.

If perineural invasion is present, an entry is required if it meets the broadly agreed criteria to upstage to T3 (a named nerve or large calibre ≥0.1 mm diameter or beyond the dermis). AJCC TNM 8 contains all the criteria, whereas UICC is confined to a named nerve, which may include clinical or imaging detection. Named nerves and those beyond the dermis are invariably large calibre in type, over 0.1 mm in diameter.

UICC and AJCC versions of TNM 8 are very similar but not identical. Whereas UICC stratifies T1, T2 and T3 at ≤20 mm, >20 mm to ≤40 mm and >40 mm, respectively, AJCC stratifies at <20 mm, ≥20mm to <40 mm and ≥40 mm, respectively. At the time of writing the dataset, neither UICC nor AJCC have published an erratum on their websites (www.wileyanduicc.com; www.cancerstaging.org). However, it is more likely that UICC breakpoints are the most appropriate version, as its stratification is identical to that used by both UICC and AJCC TNM 8 for MCC and tumours of the lip and oral cavity, and also TNM 7. UICC TNM 8 also excludes the vermilion border of the lip (as with UICC and AJCC TNM 7), whereas AJCC TNM 8 includes the site.

AJCC states that the maximum dimension should be a clinical measurement on the evidence base available, but a pathological measurement is permitted if a clinical one is not available. UICC are not specific on matters of measurement other than recommending physical examination. This dataset also recommends use of the clinical measurement but supports use of a pathological measurement if the clinical one is absent. Indicating which one is used for staging is a new dataset item. Preferably this should be the macroscopic measurement, unless in a particular case use of a microscopic one is unavoidable.

It is envisaged that TNM 8 will provide a better prognostic discrimination of the T categories than that achieved in TNM 7.

*Tumour thickness/depth is measured in millimetres from the granular layer of the nearest normal adjacent epidermis to the deepest point of the tumour.

pN category

As with UICC and AJCC TNM 7, UICC and AJCC TNM 8 still base nodal staging on the size, number and location of positive nodes, although minor differences exist between TNM 7 and TNM 8. Similarly, UICC TNM 8 carcinoma of the skin (essentially limbs and trunk but excluding the eyelid and genitals) and skin carcinoma of the head and neck display minor differences. AJCC TNM 8 head and neck, with one minor addition (pT2a includes the presence of extranodal extension [ENE] in a node ≤30 mm), is identical to UICC TNM 8 head and neck.

pN categories of UICC TNM 8 carcinoma of the skin are based purely on ipsilateral nodes. Contralateral nodes are regarded as distant metastases for UICC TNM 8 but not for AJCC TNM 8. For single positive nodes, pN stratification for pN1, pN2 and pN3 is ≤30 mm, >30 mm–60 mm and >60 mm, respectively. Multiple nodes ≤60 mm are also pN2.

pN categories of UICC TNM 8 skin carcinoma of the head and neck and carcinoma of the skin are similar with regard to the size of nodes and number, although single and multiple nodes below 60 mm in pN2 in head and neck are defined as pN2a and pN2b, respectively. A bilateral or contralateral node ≤60 mm is defined as pN2c in head and neck and a positive node >60 mm is defined as pN3a.

A major development in pN3 for both UICC and AJCC TNM 8 head and neck is the recognition of ENE. ENE was not part of staging in TNM 7. ENE can have either clinical or pathological definitions and its presence defines pN3b.

There is an expectation that a minimum of six nodes will be identified in lymphadenectomy specimens for carcinoma of the skin and ten or 15 nodes for selective or radicle/modified radicle lymphadenectomy, respectively.

pTNM stage group

The TNM 8 stage/stage group is largely similar to TNM 7. UICC TNM 8, however, divides Stage IV into Stage IVA and Stage IVB, depending on the absence or presence of a distant metastasis.

Selection of UICC TNM 8

For NMSC (except Merkel cell carcinoma), UICC TNM 8 covers the entire skin surface in two chapters titled 'Carcinoma of the Skin' and 'Skin Carcinoma of the Head and Neck'. By contrast, AJCC has only one chapter titled 'Head and Neck for Cutaneous Squamous Cell Carcinoma'. Overall, however, there are extremely close similarities in the UICC and AJCC TNM 8 staging of skin cancer. Accordingly, the authors of the RCPath datasets were confident to recommend the use of UICC TNM 8 and thereby also ensure coverage of the entire skin surface for NMSC.

1.3.2 Lymph nodes

Two proformas are now used to cover lymph nodes from the head and neck and non-head and neck regions (as defined in section 1.3.1).

1.3.3 Evidence base

Apart from two publications on primary cutaneous eccrine porocarcinoma and apocrine carcinoma,[11,12] there are still few publications that report on sufficiently large numbers of patients with primary adnexal carcinomas to be considered scientifically robust in relation to prognosis.

For eccrine porocarcinoma, recognised aggressive features include:

- greater than 14 mitoses per high power field
- lymphovascular invasion
- depth >7 mm.

For apocrine adenocarcinoma, a recognised poor prognostic feature is a grade III tumour defined by mitotic index, pleomorphism and percentage tubules, using a modified Bloom-Richardson method for the scoring of breast carcinoma.[13]

Although histopathologists and MDTs should be aware of the publications referenced above, core data collection should be limited to what is required for TNM 8 staging. Some data items in apocrine adenocarcinoma can be of value in assessing the tumour grade for the dataset.[12] A useful recent review of malignant sweat gland tumours is available.[14]

1.3.4 Changes in 2018

The authors are mindful that significant changes in skin cancer are likely to be published during 2018. These include a new (second) edition of the WHO Classification of Skin Tumours and new national clinical guidelines on NMSC from the BAD. Any such changes will be captured in the next revision of this dataset. After consideration, rather than await these changes, it was agreed that this new dataset would proceed to facilitate use of the new TNM classification from 1 January 2018.

1.4 Core and non-core data items

Data items are divided into core and non-core types.

As defined in the foreword, core items in RCPath cancer datasets are robust, evidence-based data items that are required for cancer staging, management and prognosis. These data items are expected to be available routinely for cancer MDT meetings, recorded by MDT management systems and used as part of the National QSP.

The foreword also sets out that non-core data items are not considered mandatory on a national basis, but some or all may be included to provide a more comprehensive report or to meet locally agreed clinical or research requirements.

The core pathological data items are summarised in structured proforma style, which may be used as the reporting format, or combined with free text as required. There is peer support for the idea that the use of structured proformas (or protocols/checklists) contributes substantially to improving the quality of histopathology reports.

2 Clinical information required on the specimen request form

The provision of clinical information is the responsibility of the clinician submitting a specimen for pathological examination. The requirement for clinical information is based on the proposed UK National Histopathology Request Form (Appendix C) and COSD.[7] The information is required for MDT discussion and also conforms to NICE requirements[4,5] for the clinician. As a minimum these include the site of origin and type of specimen. Similarly, for NMSC, it is vital to emphasise that T1, T2 and T3 categories are best based, according to available evidence, on the maximum clinical dimension/diameter of the tumour. This must be recorded on the request form and in the clinical notes by the clinician. The maximum pathological dimension/diameter, however, can be used if the clinical dimension is absent on the request form.

Other clinical items are recognised to be important but since their provenance is not the primary responsibility of the pathologist, they are listed as non-core items to encourage their collection and inclusion in the histology report.

3 Preparation of specimens before dissection

3.1 Skin specimen

The overall size of the submitted specimen must be measured. When appropriate, and in particular with excision specimens, this should incorporate three dimensions. Any unusual features that could be diagnostically important should be recorded.

The presence, absence or any uncertainty about the existence of a lesion or abnormality to the naked eye must be recorded. When a lesion is apparent, measurements should include the maximum diameter and elevation.

Inking the margins of all excision skin specimens with potential skin cancer should be considered. Standard techniques include the use of substances such as Indian ink, silver nitrate, alcian blue, crayon or commercial preparations. Excepting Mohs surgery, inking is the best way to obtain a reasonably accurate assessment of surgical margins and thereby lesion clearance. Discretion and flexibility should, however, be applied in this decision. The potential for dye to track and give rise to false margins should be taken into account in the final histopathological assessment. Its routine use in large specimens, especially with a clearly visible small central lesion, is debatable. Even in these circumstances, however, inking may

be useful because of the possibility of unexpected microscopic extension of the lesion. It is not necessary to ink curetted specimens or incisional, shave and punch biopsies as these are not performed for excisional purposes.

The examination of specimens submitted to the laboratory with prior designated orientation (by sutures or inking, for example) must be facilitated by the use of different coloured inks on different margins, notching the specimen or inserting coloured agar into the processing cassette.

3.2 Regional lymphadenectomy specimens

The generalities of macroscopic neck and axillary block dissection, described for head and neck cancer and breast cancer,[15–17] apply equally to skin cancer. Inguinal dissections can be approached as axillary dissections.

The overall dimensions of the fixed tissue must be described, with particular note of any designated orientation and any apical node. Nodes should be identified by inspection and palpation. The use of clearing agents is time consuming and increases cost. Accordingly, this is not regarded as essential.

If relevant to the specimen, evidence of ENE should also be recorded, e.g. fixation to skin or adjacent structures included in the specimen.

3.3 Sentinel lymph node biopsy

Sentinel lymph node biopsy (SLNB) does not appear in either UICC or AJCC TNM 8 staging classifications for NMSC (excepting MCC). In addition, there is currently no sound evidence base to support the use of SLNB for adnexal carcinoma, although some scientific evaluation of this area is ongoing. TNM 8 does not contain specific advice about handling an SLNB for NMSC. Where appropriate, the dataset guidance contained in nodal excisions of head and neck carcinomas[15] can be used and modified according to general advice in AJCC TNM 8. Alternatively, the bread-loaf or bivalve techniques described in the MCC[18] or malignant melanoma[19] datasets, respectively, can be used, but omitting or modifying their immunohistochemical component.

4 Specimen handling, dissection and block selection

4.1 Skin specimen

Very small specimens may not require trimming. In this situation, however, it must be appreciated that a histological section along the longitudinal axis may not accurately reflect the nearest peripheral margin.

The method of handling excisional biopsies depends on the size of the specimen, whether the lesion can be seen, the position of the lesion on the specimen, the uniformity of the lesion and the type of processing technology. It is recommended that a separate judgement be made on each individual case, taking these variables into account, assisted by the following general comments.

Laboratories using rapid processing technology must ensure that trimmed tissue is no more than 2–3 mm in maximum thickness, whereas those using conventional processing technology can increase this to 4–5 mm.

Specimens that need to be trimmed, and in which the lesion can be seen, should be cut at regular intervals so that the nearest naked-eye margin to the lesion can be assessed histopathologically. For many skin ellipses, this will require transverse rather than longitudinal

sectioning. When multiple sections are required, this should be undertaken by the 'sliced bread/toast rack' method.

The more of the specimen examined, the more accurate the assessment of the surgical margins will be. Accordingly, for specimens under 10 mm, it is recommended that most or all of the lesion be examined. For specimens over 10 mm, the extent of sampling should take into account the proximity of the lesion to the margins, maximum lesional thickness, lesional uniformity and any unusual features. When the lesion can be clearly identified, sampling the polar margins of skin ellipses should be discretionary and based predominantly on whether the lesion is close (under 1–2 mm) to the margin or is less than that in the shorter transverse axis.

When the lesion cannot be identified, or there is uncertainty, the whole of the specimen should be sampled. In this situation, the polar ends from the long axis of a skin ellipse should be examined. These can be placed in one or two cassettes, depending on whether orientation of the specimen has been identified clinically.

In some very large specimens, as well as sampling the lesion, the peripheral margins at selected points can be sampled, although the limitation in assessing margin clearance should be appreciated.

The dissection of a wedge excision (e.g. ear or lip) can be flexible depending on the nature of the specimen, whether there is a location marker and the position of the lesion. The same flexibility applies to whether the specimen needs to be inked. The selection of blocks taken, however, must be clearly documented and frequently a diagram can be useful. Additionally, if necessary, this should be accompanied by direct liaison between the person dissecting the specimen and the later reporting pathologist. This is the recommended approach to avoid potential problems in block interpretation during subsequent reporting. The blocks selected, however, must be able to measure the lesional margins to the same degree of accuracy stated in the dataset for the type of skin cancer present. Sometimes, there is only one so-called wedge margin and no peripheral and deep margins. If applicable, the presence or absence of cartilage invasion should be stated in the report.

The requirement for step-levels/sections in any type of specimen is dependent on the requirement to identify a lesion, achieve full-face assessment, establish a diagnosis and assess the margins. Requests for levels at cut-up can be used flexibly, but with the proviso that laboratory protocols and technical experience must ensure that sufficient material remains in the paraffin block for further investigation if subsequently proved necessary.

Trimmed pieces of tissue of different thickness or the processing of more than two pieces of tissue in one cassette incurs an increased risk of incorrect orientation and sectioning, with potential loss of diagnostic and margin information.

Re-excision specimens are covered in section 11.2.

4.2 Regional lymphadenectomy specimens

All potential lymph nodes must be removed, blocked and recorded in a manner that permits an accurate microscopic count of lymph nodes, number involved and measurement of the maximum diameter of the largest metastasis. Nodes can be bisected or sliced at 4–5 mm intervals.

The dimensions of the largest macroscopic metastatic deposit should be recorded. Representative sampling is acceptable, taking into account the need to measure the largest metastasis, ascertain whether more than one node is involved and to identify potential extracapsular invasion. Ascertaining the maximum diameter of the largest metastasis should be achieved by adopting a pragmatic approach, using both macroscopic and microscopic

information. The lymph node or tumour closest to the surgical margin, within a macroscopic distance of 5 mm, should be identified and sampled.

If relevant to the specimen, evidence of ENE should also be recorded, e.g. fixation to skin or adjacent structures included in the specimen.

Inking for the specimen surface is not regarded as essential.

5 Core data items

5.1 Clinical

The core clinical data that must be recorded on the pathology report are the site of origin, type of specimen and maximum clinical dimension/diameter. The latter is a primary determinant for establishing TNM 8 subcategories T1, T2 and T3.

[Level of evidence B – The maximum clinical dimension/diameter of a lesion is a principal staging determinant.]

If invasion of a named nerve is identified clinically in NMSC, the clinician must advise the pathologist on the request form as this is an upstaging determinant.

[Level of evidence B – Clinical invasion of a named nerve is an upstaging determinant.]

When identified in head and neck NMSC (excluding MCC), the clinician should inform the pathologist on the request form that ENE has been demonstrated clinically. This can be the presence of skin involvement or soft tissue invasion with deep fixation/tethering to underlying muscle or adjacent structures or clinical signs of nerve involvement.

[Level of evidence B – Clinical ENE is a principal nodal staging determinant for head and neck carcinomas, excluding MCC.]

5.2 Pathological: macroscopic

5.2.1 Skin

The three-dimensional size of the overall specimen should be recorded in millimetres. The overall size of the specimen can, at times, assist clinical discussion on a case. Specimen size can also be occasionally vitally useful in specimen identification and distinction, if there are issues relating to multiple specimens in one or multiple specimen containers.

The maximum dimension/diameter of all lesions must be recorded in millimetres.

[Level of evidence B – Maximum dimension/diameter of a skin lesion in fixed tissue is a primary staging default determinant in the absence of a clinical dimension.]

5.2.2 Lymph node

The three-dimensional size of the overall specimen must be recorded in millimetres.

Localising markers attached by the clinician must be recorded.

The maximum diameter of the largest lesion must be recorded in millimetres.

[Level of evidence B – The size of the largest nodal metastatic deposit is a primary staging determinant].

5.3 Pathological: microscopic

5.3.1 Diagnostic subtype of adnexal carcinoma

Where possible, the diagnosis should conform to the WHO classification of malignant adnexal tumours and the appropriate M code should be applied.[3] There is a correlation between tumour subtype and clinical outcome. It is recognised that in some instances, diagnostic entities may be reported in other publications (for example, the AFIP or specialist textbooks) and the latter diagnoses may not be included in the WHO classification.[9,13,14,20]

The presence of a benign adnexal tumour in the background should be recorded.

[Level of evidence C – The diagnostic subtype adnexal carcinoma has a correlation with clinical outcome.]

5.3.2 Grade

The term 'differentiation' has two main meanings with respect to adnexal neoplasms.

First, the lineage of differentiation, i.e. whether the tumour is, for example, eccrine, apocrine, follicular or sebaceous.

Second, the histological grade of tumour differentiation, i.e. whether the tumour is well, moderately or poorly differentiated. It is this tumour differentiation to which the core data item of grade relates. Tumour grade is a core item for all tumours in the COSD.[7] Evidence indicates that increasing dedifferentiation correlates with an increasing risk of recurrence and metastasis.[2]

Although AJCC TNM 8 lists poor differentiation as a high-risk feature, its definitions are broad. They are summarised below:

- low-grade tumours are defined as tumours that show considerable cellular differentiation, uniform cell size, infrequent cellular mitoses and infrequent nuclear irregularity
- high-grade tumours are described as showing poor differentiation, necrosis and high mitotic activity.

After consultation, a decision was taken to modify the classification used for squamous cell carcinoma and to incorporate the three elements of comparison against normal epithelium (here, adnexal type). These comprise the degree of adnexal differentiation, nuclear pleomorphism and mitotic activity.[20]

Three grades can then be identified as follows:

- well-differentiated tumours are characterised by epithelium easily recognisable as adnexal in origin. The tumours display little nuclear pleomorphism and mitotic figures are sparse. The adnexal elements predominantly comprise ducts and/or lumina in apocrine or eccrine tumours, sebaceous cells in sebaceous tumours and follicular elements in follicular tumours.
- moderately differentiated tumours show rather more architectural disorganisation and an adnexal lineage is less obvious. Nuclear and cytoplasmic pleomorphism are more pronounced and mitotic figures (including abnormal forms) are much more common.
- in poorly differentiated variants, it is more difficult to identify adnexal lineage and there is significant cytological and nuclear pleomorphism. The mitotic index is high. In this group, the diagnosis may rely on the results of immunohistochemistry. Antibodies against CAM 5.2, cytokeratin 7, EMA, CEA, HMFG1, GCPFP-15 and BerEP4 may be helpful. The absence of a myoepithelial component can be demonstrated using antibodies against smooth muscle actin and S100.

Apocrine adenocarcinomas can be graded using a modified Nottingham breast system:[12,21]

Mitosis/mm²	Pleomorphism	Tubules	Score
0–6	Mild	>75%	1
7–12	Moderate	10–75%	2
>12	Severe	<10%	3

Score	Grade	
3–5	1	Well differentiated
6–7	2	Moderately differentiated
8–9	3	Poorly differentiated

The grading system for cutaneous sebaceous carcinoma based on growth pattern that is recommended by the WHO[3] has not been adopted in this dataset. Although the WHO's recommendation is based on a publication by Rao *et al.*, the grading system is misquoted and does not appear in Rao's publication.[22] In addition, the publication by Rao *et al.* relates purely to sebaceous carcinoma of the ocular adnexa. High-risk features reported by Rao *et al.* include vascular and lymphatic invasion, orbital invasion, involvement of upper and lower eyelids, poor differentiation, multicentric origin, diameter >10 mm, infiltrative growth pattern and pagetoid invasion of the adjacent epithelium.

TNM 8 provides no guidance on the percentage of differentiated components required to establish tumour grade. On that basis, this dataset has adopted the widely recognised approach that a tumour should be classified according to its most poorly differentiated region, irrespective of the percentage present.[20] This approach is also used in other RCPath cancer datasets (such as mucosal malignancies of the oral cavity).[17] The reporting proforma requires an entry of whether a poorly differentiated component is present or absent. The percentage of different components can be entered as a non-core dataset item.

[Level of evidence C – Increasing dedifferentiation correlates with increasing risk of recurrence and metastasis.]

5.3.3 Thickness/depth

UICC and AJCC TNM 8 regards a thickness/depth >6 mm as deep invasion and a solitary high-risk factor that upstages T1 or T2 to T3. This therefore represents a core item.

Evidence on risk stratification of thickness between 2 and 6 mm is not available for adnexal carcinoma and, accordingly, is not included as a core item.

In TNM 7 and TNM 8, the terminology used for this parameter, by both UICC and AJCC, is variable and guidance is limited in UICC TNM 8. The terms used most frequently are thickness and/or depth, although thickness appears favoured. Depth of invasion (DoI) is also used by AJCC and would be a logical twin to the term level of invasion. Unfortunately, however, DoI receives varying usage, sometimes even meaning level of invasion. Breslow thickness is now universally used in melanoma and is defined in relation to the granular layer over the tumour. Furthermore, in TNM 7, Breslow thickness was also used for NMSC. In TNM 8, however, although it is recommended that the measurement of thickness/depth is made from the granular layer to the base of the tumour, the granular layer of the adjacent normal epidermis is now used instead. This could be regarded as a modified Breslow thickness. AJCC explain that this change has been instigated to avoid various issues. They state that, in tumours, the granular layer can be lost and simply measuring from the surface of the tumour to the base may overestimate prognostic impact because the dead keratotic surface of some tumours may contribute little prognostically.

Therefore, to achieve uniformity in terminology, the RCPath recommend that the most appropriate term to use in NMSC is also thickness, although accepting it has the same

interchangeable meaning in this context as depth. On that basis, thickness or thickness/depth (in section 1.3 relating to new changes) are the terms used in this dataset. Furthermore, the RCPath also acknowledges that this means no term is currently uniformly available to describe the maximum vertical distance, from the top to bottom, of the malignant cells within a tumour. Accordingly, it is recommended that the term absolute thickness (stated in mms) is used for this dimension.

The reason for implementing the new method of measuring thickness in TNM 8 appears to have logic and RCPath Figures 1 and 2 illustrate the measuring methodology in tumours of either classic ulcerative or endo-exophytic type. In the consultation on the datasets, however, RCPath Fellows have highlighted not uncommon difficulties in the practical application of this method. This may lead to variable and inconsistent practice and over- or under-rating thickness measurements, thereby potentially impacting on pathological stage and clinical risk status. It is evident that numerous architectural variations of tumour and adjacent epidermis can occur that are not adequately covered by the TNM 8 guidance. Advice has been sought from both the UICC and AJCC but this enquiry is still under active consideration. Therefore, in the interim, the RCPath consider it appropriate to provide provisional guidance, to reduce the subjectivity and variation in the measurement of tumour thickness, in these problematical areas. These difficulties occur more commonly with cSCC but can also occur with BCC and adnexal tumours. They are more easy to accommodate, however, with BCC and adnexal tumours as measurements are only recorded in relation to 6 mm thickness.

Although adnexal carcinoma can be of follicular origin, the problematical cup-shaped and crateriform lesions of follicular-derived squamous cell carcinoma fortunately appear to occur much less frequently.

In some cases, all of an exophytic tumour may originate at the level of or above the granular layer of the adjacent normal epidermis. As a zero or negative thickness value could be viewed as lacking credibility, the RCPath recommends that these cases are recorded as simply <6 mm.

In other not uncommon cases, the appearance may fail to conform to any architectural model. In some instances, the adjacent normal epidermis is sloping, irregular or has undulating crests and troughs. In others, there may be gradations between reactive squamous epithelium and the adnexal carcinoma, either at the edge or over the tumour. This may give rise to sloping squamous epithelium upwards along the edge and onto the top of the tumour. Furthermore, the granular layer can sometimes be absent. Adnexal carcinoma can also display its own problems with an admixture of benign and malignant elements. Use of classic Breslow thickness in this situation would appear inappropriate for the reasons already explained by AJCC. Measuring from the base of the epidermis would be confronted with the same problems and estimating a theoretical average height of normal granular layer could be difficult to apply in practice. Accordingly, until definitive guidance is available, the RCPath recommend that absolute thickness in millimetres (as defined above) is recorded in this situation. In particular, it is believed that this approach will not falsely under-rate the thickness measurement. If absolute thickness is used for this measurement, it would appear appropriate to mention its use as free text in the comments section of the report. It is believed that the gain in uniformity with this interim approach will outweigh the variation in measurement by using the TNM 8 guidance in an ad hoc, subjective and variable manner. In view of these acknowledged difficulties, measuring thickness of NMSC may, at times, require a pragmatic approach to the problem.

Tumour thickness can be measured using an ocular micrometer, Vernier scale or an eyepiece measurement graticule.

The absence of specific measurement requirements, other than in relation to 6 mm, should simplify measurement of thickness.

Depth ≤6 mm or >6 mm can be recorded as a whole integer as a non-core item.

[Level of evidence C – Tumour depth/thickness is a staging determinant.]

Figure 1: Measuring the thickness/depth of an ulcerative tumour

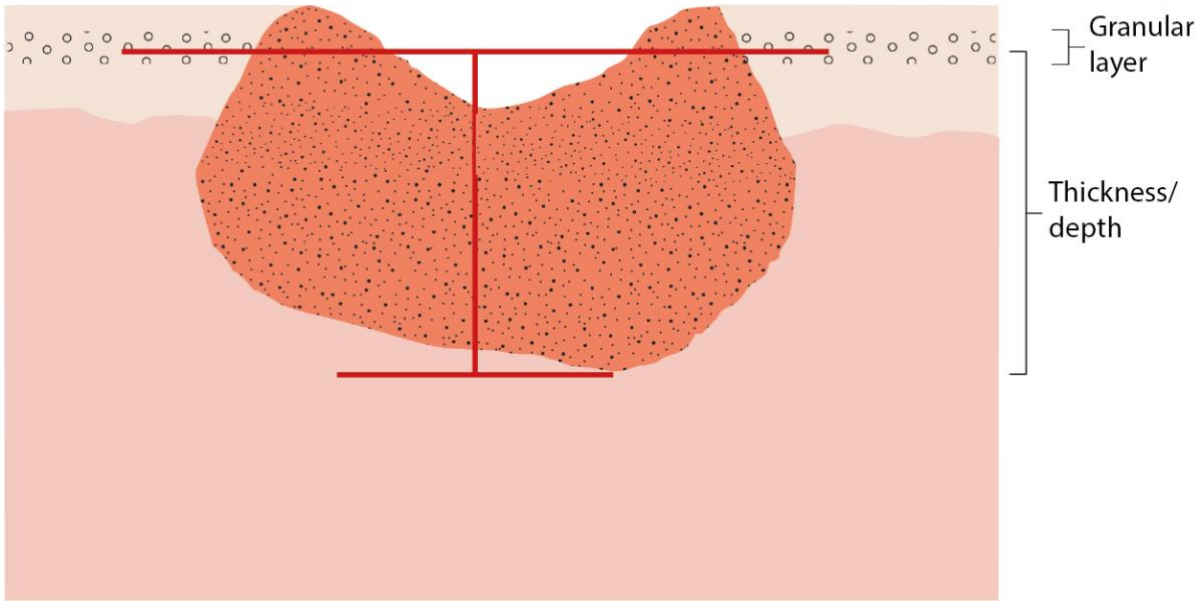
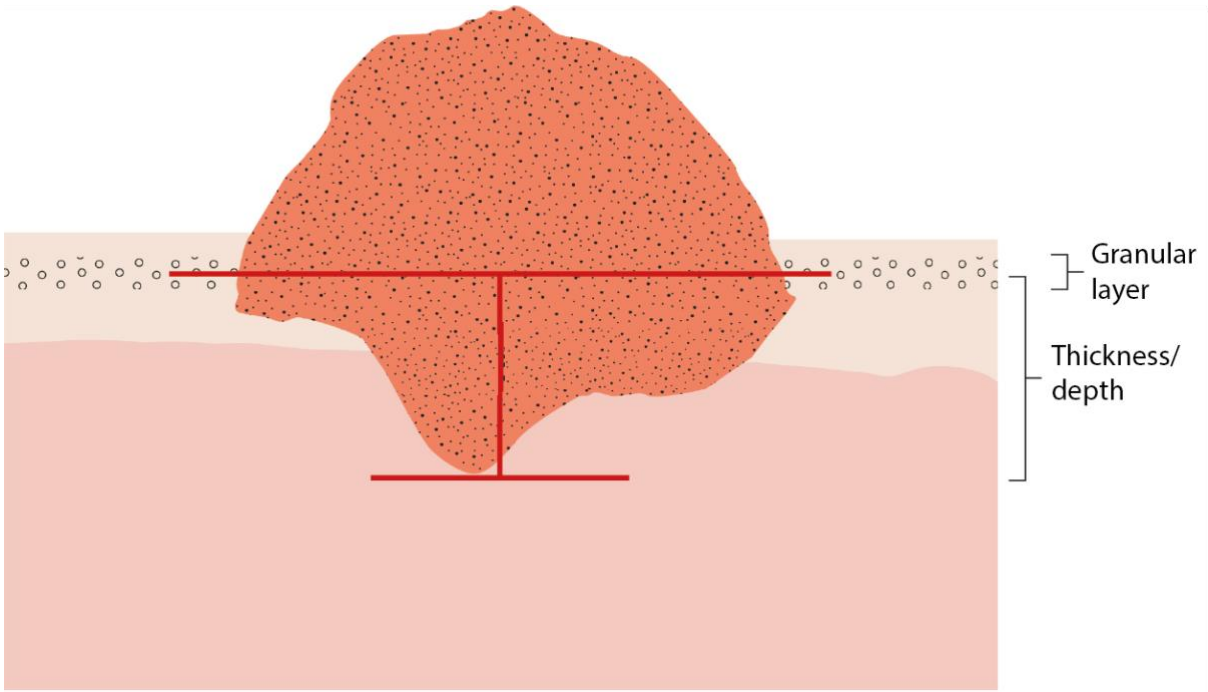


Figure 2: Measuring the thickness/depth of an endo-exophytic tumour



5.3.4 Level of invasion

TNM 8 defines invasion beyond/further than the subcutaneous fat as deep invasion and a solitary high-risk factor, which upstages T1 or T2 to T3. TNM 8 also defines T3 by minor bone invasion. pT4a is defined by gross cortical or marrow invasion. pT4b is defined by axial skeleton or skull base or foraminal invasion.

Assessment of the level of invasion in this dataset will now be facilitated by the absence of a requirement to specify invasion into the papillary dermis (Clark level 2), interface between the papillary and reticular dermis (Clark level 3), the reticular dermis (Clark level 4) and the subcutaneous fat (Clark level 5).

[Level of evidence C – The level of invasion is a staging determinant.]

5.3.5 Lymphovascular invasion

Evidence to indicate that lymphovascular invasion correlates with recurrence, metastasis or prognosis is limited. The presence of an endothelial-lined space is an essential criterion for lymphovascular invasion, as it is essential to distinguish retraction artefact, but it is not necessary to distinguish lymphatic and venous invasion.

Unlike malignant melanoma, there are no TNM definitions for satellite, microsatellite or in-transit metastasis for adnexal carcinoma. In particular, there are no definitions with regard to size or distance from the primary tumour. As with MCC in the skin, it is recommended that the term 'in-transit metastasis' be used empirically for any metastasis between the primary tumour and regional nodes. If present, this can be specified in the lymphovascular section.

[Level of evidence D – Lymphovascular invasion may indicate increased risk of local recurrence and metastasis.]

5.3.6 Perineural invasion

Perineural invasion, when conforming to specified defined criteria, is a high-risk feature that upstages T1 or T2 to T3. The criteria include a named nerve or large calibre ≥0.1 mm diameter or beyond the dermis. AJCC TNM 8 contains all the criteria, whereas UICC TNM 8 is confined to a named nerve, which may include clinical or imaging detection. Named nerves and those beyond the dermis are invariably large calibre in type, over 0.1 mm in diameter. On that basis, it appears appropriate to apply all of the criteria.

Clinical invasion of a named nerve is also an upstaging criterion and this information should be conveyed to the pathologist.

There is no evidence to indicate whether perineural invasion in the context of skin applies to intratumoral or extratumoral invasion, including the invading front. Some, however, restrict the term to extratumoral invasion. This information can be included as a non-core item.

In re-excision specimens, it is important to ensure that apparent perineural invasion is not so-called 're-excision perineural invasion'. This reflects the presence of benign perineural epithelial cells in previously biopsied areas, most likely representing reactive/reparative proliferation of traumatised eccrine sweat gland ducts into a plane of lower resistance. Immunohistology can be used to make the distinction.

[Level of evidence B – Perineural invasion indicates an increased risk of local recurrence and is a staging determinant.]

5.3.7 Margins

Tumour recurrence and clinical morbidity are influenced by the completeness and adequacy of primary excision. In general, however, use of the words 'complete/incomplete' and 'adequate/inadequate' should be avoided in routine histopathological reports. Unless all of the margins have been examined, it is difficult to be certain about the completeness of excision. Traditionally, the term 'complete' has been more acceptable in the context of Mohs surgery, where the peripheral margin has been examined virtually in its entirety. This view is now significantly weakened in the context of modern paraffin wax histology, with its considerably more thorough sampling of margins, and with the more recent methods of specimen handling, as advocated in this and previous datasets. Adequacy/inadequacy usually incorporates a degree of clinicopathological subjective judgement and is therefore more applicable in the

context of skin cancer MDT discussion. However, it is well recognised that in a significant number of cases where tumour extends to a margin, there is no residual tumour present on re-excision. This indicates that the term 'incomplete' is inappropriate in this situation. Similarly, lesions not at the margin can occasionally recur and therefore may not be completely excised as originally thought. In non-excision specimens with therapeutic intent (eg double curettage and cautery), the term 'edge' is increasingly favoured. This is to aid distinction from the normal use of the term margin, as the true surgical margin lies beyond the zone of cautery not represented in the specimen. Accurate margin assessment in this situation requires clinical input with regard to the nature of the procedure undertaken and the degree of certainty that therapeutic intent was achieved. This often requires discussion within the context of a skin cancer MDT meeting.

Although evidence is more robust for peripheral margins, there is broad peer agreement that comments are necessary about the clearance of both peripheral and deep excision margins. The words 'peripheral' or 'radial' rather than 'lateral' are generally preferred, to avoid problems by possible inference of a medial margin. The words 'lateral' and 'medial' may be applicable to specifically defined and designated margins in orientated specimens. Careful consideration has been given as to whether the extent of peripheral and deep clearance should be measured in quantitative terms. It is certainly clinically necessary to have information about whether the peripheral and deep excision margins are not involved or involved by tumour. Although all RCPath datasets are standardised to the term not involved ('uninvolved' internationally), the term 'clear' is preferable to minimise potentially important errors in the use of 'involved' and 'not involved'. These occur not uncommonly in reports dictated from a template. Although less frequently used, negative or positive correlates acceptably with 'not involved' (clear) and 'involved', respectively. Clinicians invariably also wish to know whether the tumour is 'close' to the nearest margin to evaluate the potential risk of recurrence, the necessity for further treatment and follow-up. 'Close' is, however, a poorly defined term and used inconsistently for skin cancer treatment and management. The evidence base for the term is also limited.

Guidance on adequate clinical margins is available in the national clinical guidelines. Adequacy of clearance is essentially a risk assessment of percentage chance of recurrence, based on margin clearance and low/high-risk status of the tumour. For squamous cell carcinoma and clinical margins, this varies between 4 and 6 mm, or more.[8] Information on histological margins is more limited. For BCC, the histological definition of 'close', based on recurrence, is variable and has included measurements between 0.31 and 0.84 mm, or less than 1 high power field.[13,20] The figures vary according to growth pattern; approximately 10% of infiltrative BCC with margins greater than 0.75 mm will recur. Few, if any, BCCs will recur with a histological margin beyond 0.84 mm. On that basis, a robust evidence-based histological definition of 'close' is still awaited and use of the term therefore remains subjective. Although some information is available for BCC, less is available for cSCC and adnexal carcinoma. Accordingly, the reporting of margins below 1 mm to one decimal point cannot be supported as a core item, although this is a non-core option.

Consultation between the RCPath and BAD in 2001 revealed strong support (for clinical purposes) in knowing whether cutaneous carcinoma excision margins are histologically involved (0 mm), not involved (or clear) below 1 mm and not involved (or clear) above 1 mm. Although accepted as having a degree of subjectivity, both the BAD and RCPath agreed that non-involved margins below 1 mm can usefully be termed 'clear but close'.

As a core data element for skin cancer, the COSD records whether tumour excision margins are clear by more than 5 mm, clear by at or greater than 1 mm but less than or equal to 5 mm, or less than or equal to 1 mm but without tumour reaching the margin.[9] Skin cancer margins should therefore be measured in relation to both 1 mm and 5 mm breakpoints. There is also additional peer support for auditing the excision margins of all skin cancer specimens between different Trusts and general practices within a cancer network/alliance and between different clinical specialities and clinicians. Measuring resection margins over 1 mm histologically to within 1 mm is one way to facilitate this objective; this could also represent a reasonable

surrogate marker for clinical margins as defined in national guidelines. This dataset recommends measuring peripheral and deep margins histologically as <1 mm, 1–5 mm and >5 mm. Measuring to a whole millimetre integer over 1 mm is included as a non-core item.

It is important that assessment of a margin below 1 mm is undertaken on blocks selected according to the RCPath protocol, on 'full-face' sections, with a low threshold to request additional levels to increase the accuracy of assessment.

It should be noted that margin definitions used for mucosal malignancies of the oral cavity, including vermilion lip (>5 mm clear, 1–5 mm close and <1 mm involved), are not regarded as applicable to cutaneous squamous cell carcinoma, including hair-bearing lip.

This dataset defines margin clearance that is either involved or not involved but <1 mm as high risk. Using <1 mm as the definition takes into account the limited evidence base in this area and errs on the side of clinical safety, to incorporate different variables such as tumour type, fixation shrinkage, lesion sampling and levels.

Although not listed in NICE guidance, there is increasing clinical practice for so-called clear but close margins to receive skin cancer MDT review. This can then take into account the degree of histological closeness to within 0.1 mm, the growth pattern, the extent of closeness and its position, especially in the event of an orientated specimen. In the previous edition of the dataset, this information was a non-core item. Consideration has therefore been given as to whether this should now become a core item in the current dataset. Consideration has also been given as to whether the information could be better assessed by the pathologist reviewing the case for a skin cancer MDT. Certainly, the microscopical demonstration of these histological features facilitates MDT discussion and permits a team consensus on the possible degree of clearance of the lesion, adequacy of treatment and whether further treatment is indicated. Although equivocal, the RCPath consider that there is still insufficient evidence or clinical guidance to alter the approach used in the previous dataset, taking into account that this information can still be currently provided as a non-core item in the report. It is recommended that if this approach is adopted, however, that the minimum non-core information needs to be margin distance to 0.1 mm. The RCPath are aware that new clinical guidelines on BCC and squamous cell carcinoma will be published by the BAD in 2019 and this may include a recommendation to refer all cases with clear but close margins to a skin cancer MDT. In this eventuality, the RCPath are likely to then support clear but close margins below 1 mm being reported as core items, to include at least a margin measurement to the nearest 0.1 mm.

[Level of evidence B – Margin status correlates with the risk of clinical recurrence.]

5.3.8 Maximum dimension/diameter

The maximum dimension/diameter is the major breakpoint determinant to define T categories in TNM 8: ≤20 mm, >20 mm to ≤40 mm and >40 mm defines T1, T2 and T3 categories, respectively, although T1 and T2 can be upstaged to T3 by the presence of one or more defined high-risk factors (see Appendix A).

AJCC states that the maximum dimension should be a clinical measurement on the evidence base available, but permitting a pathological measurement if the clinical one is not available. UICC are not specific on this point other than recommending that the measurement is assessed by physical examination. This dataset also recommends the use of clinical measurement but supports the use of pathological measurement if the clinical type is absent. Indicating the one used for staging is a new dataset item. Preferably, this should be the macroscopic measurement, unless in a particular case use of a macroscopic and/or microscopic one is unavoidable.

[Level of evidence B – Maximum diameter is a primary staging determinant and a determinant of risk permitting excision in community care by general practitioners.]

5.3.9 Lymph nodes (regional and intraparotid): number of nodes involved and maximum size of metastatic deposit

The number of involved regional and/or intraparotid nodes and the size of the largest metastatic deposit are primary pN staging determinants. There are staging breakpoints at 30 mm and 60 mm. Note that size relates to metastatic deposit and not lymph node. The number of nodes identified and the number of nodes involved are a core requirement in the COSD.[8] The anatomical site and laterality of the lymph nodes must be recorded.

[Level of evidence B – The number of nodes involved and maximum size of metastatic deposit are primary staging determinants.]

5.3.10 Lymph nodes: extracapsular extension (spread/invasion)

This is widely regarded as a manifestation of potential biological aggression and considered to be associated with a worse prognosis. This finding prompts consideration of the use of adjuvant chemotherapy.

ENE is a staging parameter for skin carcinoma of the head and neck (but not for carcinoma of the skin) and its presence signifies pN3b.

ENE is defined as invasion beyond the nodal capsule into the surrounding soft tissue, although a stromal reaction is not required.

ENE detected on histological examination is designated as ENEmi (microscopic ENE ≤2 mm) or ENEma (major ENE >2 mm), although both qualify as just ENE for pN staging.

ENE can also be identified clinically and this information should be conveyed to the pathologist (see section 5.1).

[Level of evidence B – The presence of extracapsular extension is a pN staging parameter for skin carcinoma of the head and neck.]

5.3.11 Lymph nodes: highest/apical node

Clinicians often identify the highest/apical lymph node in lymphadenectomy specimens. If identified, the report must indicate whether this contains a metastatic tumour deposit.

[Level of evidence D – This information is often requested by clinicians and considered to have some prognostic value.]

5.3.12 Lymph nodes: margin clearance of lymphadenectomy specimen

Clinicians require information as to whether the peripheral margins of lymphadenectomy specimens are clear of tumour.

[Level of evidence D – The presence of positive margins instigates consideration of adjuvant chemotherapy.]

6 Non-core data items

All or some of these items can be included to create a more comprehensive report, taking into account the local cancer alliance, clinical preferences, audit and research requirements.

6.1 Non-core clinical items

These are based on the draft UK National Histopathology Request Form (Appendix C) and can be captured if provided by the clinician. They include:

- grade of clinician undertaking procedure
- clinical diagnosis/description
- procedure intention of clinician:
  - diagnostic biopsy
  - therapeutic
- measured surgical/clinical peripheral margin (millimetres)
- whether this is a recurrent tumour
- previous histology reference number(s)
- whether the patient is immunocompromised
- whether this is a tumour arising in an individual who is genetically predisposed to cancer.

6.2 Non-core pathological items

The following are non-core pathological items:

- mitotic index/mm^2
- tumour differentiation, other than core information
- whether well and/or moderately differentiated components present
- percentage of tumour component of each different tumour grade (well, moderately or poorly differentiated)
- character of tumour periphery closest to margin:
  - circumscribed/cohesive
  - infiltrative/non-cohesive
- tumour thickness to the nearest whole integer in millimetres
- non-involved margins below 1 mm measured to nearest 0.1 mm
- margins over 1 mm measured to whole millimetre integer
- margins: information about nearest peripheral and deep margins if specimen has been orientated
- perineural/lymphovascular invasion: intratumoral, extratumoral, multifocal
- distance of perineural/lymphovascular invasion to nearest resection margin
- incisional biopsies: whether subcutaneous fat is present
- distance of metastatic nodal deposit to margin in millimetres
- blood vessel invasion in lymphadenectomy specimens
- analysis of mismatch repair gene products in sebaceous carcinoma for potential Muir-Torre syndrome
- TNM stage group: minimum on the information available
- clearance/completeness: RCPath recognises that many clinicians and MDTs look for guidance from their histopathologists with regard to the probability/likelihood of

completeness of tumour clearance. As already discussed, this is a subjective and somewhat visionary area and, accordingly, cannot be included as a core item. An individually or locally agreed statement of probability of clearance is, however, not unreasonable and is therefore included as a non-core item, with possible terminology suggested below. If used, it must be firmly understood by the clinician and/or MDT that this is a subjective and not an objective assessment, with variation in the degree of potential accuracy.

Suggested terminology could include:

- clearance appears apparently complete
- clearance appears close but probably complete
- clearance appears close but possibly complete
- clearance appears uncertain.

7 Diagnostic staging and coding

TNM and SNOMED are required for the COSD.[8]

7.1 pTNM stage and stage group

By TNM convention, TNM/cTNM (c meaning clinical) refers to staging a primary tumour that has not been previously treated. Clinical staging can therefore incorporate some pathological diagnostic information but the T category is still referred to as T and not pT. Similarly, by convention pTNM (p meaning pathological) refers to staging after surgical treatment. The pathological information for pTNM is designated pT, pN and pM with reference to the three component TNM categories.

pTNM stage/stage group for skin cancer must be recorded according to UICC and not AJCC TNM 8.[1]

pTNM staging/stage grouping must be deferred until all TNM information is available and, if appropriate, during or after skin cancer MDT discussion.

A pTNM stage/stage group can be added to a histopathology report as a non-core item, but the report should indicate that this is the minimum stage based on the information in the report.

The pTNM stage categories are broadly condensed into four stage groups:

- stage 0: in situ
- stage I: localised disease
- stage II: more extensive localised disease
- stage III: regional nodal disease
- stage IV: metastasis.

Although pTNM classically refers to the anatomic extent of disease, more recently this has, at times, incorporated additional non-anatomic prognostic information giving rise to so-called prognostic groups (UICC) or prognostic stage groups (AJCC).

pTNM stage is based on three anatomical categories: pT (Tumour), pN (Node), M or pM (Metastasis).

- pT – Primary tumour
  - pTx: Primary tumour cannot be assessed
  - pTis: Carcinoma – in situ
  - pT has multiple subcategories, i.e. pT0, pT1, pT2, pT3, pT4, reflecting increasing pT stages
- pN – Regional lymph nodes
  - pN has multiple subcategories, i.e. pN0, pN1, pN2, pN3
  - for melanoma and MCC, isolated tumour cells are defined as N1
- M – Distant metastasis
  - M/pM (if confirmed histopathologically) has two categories, i.e. M0, M1/pM1
  - it should be noted that there is no MX nor pM0
- Additional descriptors can be used:
  - the suffix ‘m’ indicates the presence of multiple synchronous primary tumours in a single organ (i.e. skin) within four months of diagnosis and is recorded in parentheses, e.g. pT1 (m). The highest T category should be used. Beyond four months they are regarded as new metachronous tumours and staged separately.
  - the suffix 'sn' indicates a SLNB and is shown in parentheses, e.g. pN1 (sn)
  - the prefix 'r' indicates a recurrent tumour with a disease-free interval or disease that has progressed with no interval. This can be designated ‘rp’ if based on pathological information.
  - the TNM R classification for residual tumour is not used as margin status; information is provided in more detail elsewhere in the dataset.

Full details are available in Appendix A.

7.2 SNOMED codes

SNOMED Topography (T) code should be recorded for the site.

SNOMED Morphology (M) code should be recorded for the diagnosis/tumour morphology.

SNOMED Procedure (P) codes should be recorded for the procedure. P codes vary according to the SNOMED system in use in different organisations, therefore local P codes should be recorded and used for audit purposes.

However, it is noted that SNOMED is now in a practical transition phase as part of the intended full implementation by the NHS and PHE of SNOMED CT. SNOMED ceased to be licensed by the International Health Terminology Standards Development Organisation from 26 April 2017.

A list of applicable T and M SNOMED and SNOMED CT codes is provided in Appendix B. Mapping SNOMED CT terminology is provided.

8 Small biopsy specimens

When procedures are carried out for the purpose of establishing only diagnosis (e.g. some punch biopsies, incisional biopsies and some shave or curettings), data items that should be recorded are restricted to providing a diagnosis and indicating any features of high-risk status.

9 Reporting of frozen sections

Frozen sections should be limited to Mohs micrographic surgery where horizontal sections are used to assess margin status accurately. Vertical frozen sections should not be used to assess margins as they are insufficiently representative of the entire margin.

The use of frozen sections for a specific clinical diagnostic problem cannot usually be supported as this would circumvent the desirable standard of prospective skin cancer MDT discussion and potential patient involvement in the decision-making process.

Frozen sections have little role in lymph node assessment of cutaneous adnexal carcinoma.

10 Cytological diagnosis

Cytology has little role in the primary diagnosis of cutaneous adnexal carcinoma.

Fine needle aspiration cytology is an appropriate modality to investigate clinically and/or radiologically abnormal regional lymph nodes to exclude the possibility of metastatic cutaneous adnexal carcinoma. This modality of investigation is also discussed in the College's *Dataset for histopathology reporting of nodal excisions and neck dissection specimens associated with head and neck carcinomas*.[15]

11 Specific aspects of individual tumours not covered elsewhere

11.1 MDT referral

All cases of difficult, borderline or malignant cutaneous adnexal tumours must be reviewed by a specialist skin cancer MDT histopathologist and all cases that are confirmed as malignant must be discussed at a specialist skin cancer MDT.[4,5]

MDT referral can be included in a report as a non-core item.

11.2 Re-excision specimens

There has been considerable debate over the extent to which wider local excision specimens for skin cancer require examination. Macroscopic examination is essential. This is the most reliable means of recording that a re-excision has been undertaken while noting the measurements of the wider excision. The fixed specimen should be sliced every 2–4 mm to identify any macroscopic abnormalities such as potential satellite lesions. Each of these must be examined histologically and the status of the margin must be assessed.

The debate centres on the cost efficiency of examining an entire macroscopically normal specimen when abnormalities were absent from the margins of the index specimen. Some peers consider that this is the only way to ensure that residual disease or metastases are not overlooked. Some also consider that the specimen should always be examined in its entirety with a biomedical scientist-led cut-up. Certain clinicians require information about whether the specimen contains a scar and whether it is completely excised. There is considerable latitude

for discretion in this area. An acceptable compromise would be to sample the specimen in its shortest transverse axis, incorporating the area where the scar appears closest to the margin. This can generally be achieved in one to four cassettes.

If a tumour in the index specimen was reported to extend to the margin, the specimen should be examined more extensively. For specimens up to 10 mm, the entire specimen should be sampled. Specimens over 10 mm should be sampled pragmatically according to the nature of the original margin involvement.

12 Criteria for audit

12.1 Recommended by NICE[4,5]

Histopathology reporting times (see below).

12.2 Recommended by the RCPath as key performance indicators

See *Key Performance Indicators – Proposals for implementation* (July 2013) on http://www.rcpath.org/profession/quality-improvement/kpis-for-laboratory-services.html:

- cancer resections must 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 by January 2016 and to update their systems in line with subsequent COSD updates.
  - standard: 95% of reports must contain structured data
- histopathology cases must be reported, confirmed and authorised within seven to ten calendar days of the procedure
  - standard: 80% of cases must be reported within seven calendar days and 90% within ten calendar days.

13 Acknowledgements

To the numerous colleagues who offered useful advice during the extensive informal professional consultation about this dataset. Their views have been listened to carefully.

To the late A Bernard Ackerman MD for his infectious enthusiasm for dermatopathology and for facilitating intellectual thought in debating the necessity for, and content of, datasets/checklists.

14 References

1 Brierley JD, Gospodarowicz MK, Wittekind CH (eds). *TNM Classification of Malignant Tumours (8th edition).* Oxford, UK: Wiley-Blackwell, 2017.

2 Amin MB, Edge S, Greene F, Byrd DR, Brookland RK, Washington MK *et al.* (eds). *AJCC Cancer Staging Manual (8th edition).* Switzerland: Springer International Publishing, 2017.

3 Le Boit PE, Burg G, Weedon D, Sarasin A (eds). *World Health Organization Classification of Tumours. Pathology and Genetics Skin Tumours.* Lyon, France: IARC Press, 2008.

4 National Collaborating Centre for Cancer. *Improving Outcomes for People with Skin Tumours Including Melanoma: The Manual*. London, UK: NICE, 2006.

5 NICE. *Skin Cancer Quality Standard.* Quality Standard (QS 130). London, UK: NICE, 2016.

6 NHS Evidence. *Improving outcomes for people with skin tumours including melanoma: Evidence Update October 2011.* London, UK: NICE, 2011.

7 Public Health England. *Cancer Outcomes Services Dataset (COSD) Version 8.0. User Guide – Pathology Dataset Version 3.0.2.* London, UK: Public Heath England, 2017.

8 National Peer Review Programme. *Manual for Cancer Services: Skin Measures Version 1.2*. London, UK: NHS England, 2014.

9 Patterson JW, Wick MR. *Nonmelanocytic Tumors of the Skin. AFIP Atlas of Tumor Pathology. Series 4, Fascicle 4*. Washington DC, USA: American Registry of Pathology and Armed Forces Institute of Pathology, 2006.

10 College of American Pathologists. *Protocol for the Examination of Specimens from Patients with Malignant Appendageal Tumours of the Skin.* USA: College of American Pathologists (CAP), In Preparation.

11 Robson A, Greene J, Ansari N, Kim B, Seed PT, McKee PH *et al.* Eccrine porocarcinoma (malignant eccrine poroma): a clinicopathologic study of 69 cases. *Am J Surg Pathol* 2001;25:710–720.

12 Robson A, Lazar AJ, Ben Nagi J, Hanby A, Grayson W, Feinmesser M *et al.* Primary cutaneous apocrine carcinoma: a clinico-pathologic analysis of 24 cases. *Am J Surg Pathol* 2008;32:682–690.

13 Kazakov DV, Michal M, Kacerovska D, McKee PH. *Cutaneous Adnexal Tumors*. Philadelphia, USA: Wolters Kluwer Health, 2012.

14 Cardoso JC, Calonje E. Malignant sweat gland tumours: an update. *Histopathology* 2015;67:589–606.

15 Helliwell T, Woolgar J. *Dataset for histopathology reporting of nodal excisions and neck dissection specimens associated with head and neck carcinomas.* London, UK: The Royal College of Pathologists, 2013. Accessed July 2018. Available at: www.rcpath.org/resourceLibrary/ataset-for-histopathology-reporting-of-nodal-excisions-and-neck-dissection-specimens-associated-with-head-and-neck-carcinomas-pdf.html

16 Ellis IO, Carder P, Hales S, Lee AHS, Pinder SE, Rakha E *et al. Pathology reporting of breast disease in surgical excision specimens incorporating the dataset for histological reporting of breast cancer.* London, UK: The Royal College of Pathologists, 2016. Accessed

July 2018. Available at: www.rcpath.org/resourceLibrary/g148-breastdataset-hires-jun16-pdf.html

17 Helliwell T, Woolgar J. *Dataset for histopathology reporting of mucosal malignancies of the oral cavity.* London, UK: The Royal College of Pathologists, 2013. Accessed July 2018. Available at: www.rcpath.org/resourceLibrary/dataset-for-histopathology-reporting-of-mucosal-malignancies-of-the-oral-cavity.html

18 Slater D, Ali R. *Dataset for histopathological reporting of primary cutaneous Merkel cell carcinoma and regional lymph nodes.* London, UK: The Royal College of Pathologists, 2018. Available at: https://www.rcpath.org/profession/guidelines/cancer-datasets-and-tissue-pathways.html

19 Slater D, Cook M. *Dataset for histopathological reporting of primary cutaneous malignant melanoma and regional lymph nodes.* London, UK: The Royal College of Pathologists, 2018. Available at: https://www.rcpath.org/profession/guidelines/cancer-datasets-and-tissue-pathways.html

20 Calonje E, Brenn T, Lazar A, McKee PH. *McKee's Pathology of the Skin with Clinical Correlations (4th edition)*. China: Elsevier Saunders, 2011.

21 Elston CW, Ellis IO. Pathological prognostic factors in breast cancer. I. The value of histological grade in breast cancer: experience from a large study with long-term follow-up. *Histopathology* 1991;19:403–410.

22 Rao NA, Hidayat AA, McLean IW, Zimmerman LE. Sebaceous carcinomas of the ocular adnexa: A clinicopathologic study of 104 cases, with five-year follow-up data. *Hum Pathol* 1982;13:113–122.

Appendix A UICC TNM 8 pathological staging of primary cutaneous carcinoma

This combines the UICC TNM 8 chapter guidance for skin carcinoma of the head and neck and carcinoma of the skin (essentially limbs and trunk but excluding the eyelid and genital skin).

This includes squamous cell carcinoma, basal cell carcinoma and adnexal carcinoma but excludes Merkel cell carcinoma and carcinomas of the eyelid, vulva, penis, non-hair-bearing lip and non-hair-bearing perianal skin (within 5 cm of the perianal margin).

Definitions of pTNM

Primary tumour (pT)

pTX	Primary tumour cannot be assessed
pT0	No evidence of primary tumour
pTis	Carcinoma in situ
pT1	Tumour ≤20 mm or less in greatest dimension
pT2	Tumour >20 mm to ≤40 mm in greatest dimension
pT3	Tumour >40 mm in greatest dimension or T1 or T2 can be upstaged to T3 by one or more high-risk pathological features including minor bone erosion, specified perineural invasion or deep invasion*
pT4a	Tumour with gross cortical/marrow invasion
pT4b	Tumour with axial skeleton/skull base/foraminal invasion

*High-risk features in relation to T1 and T2 upstaging to T3.

Definitions

Deep invasion: this is defined as a level of invasion beyond/further than the subcutaneous fat and/or tumour thickness >6 mm. Thickness is measured in millimetres from the granular layer of the nearest adjacent epidermis to the deepest point of the tumour.

UICC TNM 8 currently defines upstaging/specified perineural invasion by either clinical or imaging criteria or histological invasion of a named nerve. However, as discussed in section 5.3.6, the RCPath consider it appropriate to extend the definition of specified perineural invasion to include a nerve ≥0.1 mm diameter and/or a nerve deeper than the dermis.

Comment: UICC TNM 8 states pT is identical to T.

Regional lymph nodes (pN)

The locational division between head and neck and non-head and neck regions anteriorly represents the level of the acromio-clavicular joint and posteriorly the level of the upper margin of the shoulder blade.

Carcinoma of the skin (essentially limbs and trunk but excluding the eyelid and genital skin)

pNX	Regional lymph nodes cannot be assessed
pN0	No regional lymph node metastasis
pN1	Metastasis in a single ipsilateral lymph node ≤30 mm in greatest dimension

pN2 Metastasis in a single ipsilateral lymph node >30 mm but not >60 mm in greatest dimension or in multiple ipsilateral lymph nodes, but not >60 mm in greatest dimension

pN3 Metastasis in a lymph node, >60 mm in greatest dimension

A contralateral nodal metastasis (unlike with skin carcinoma of head and neck; see below) represents a distant metastasis.

There is an expectation that at least six lymph nodes will be identified in lymphadenectomy.

Skin carcinoma of head and neck

NB: Includes regional and/or intraparotid node(s)

pNX Regional lymph nodes cannot be assessed

pN0 No regional lymph node metastasis

pN1 Metastasis in a single ipsilateral lymph node ≤30 mm in greatest dimension, without extranodal extension*

pN2a Metastasis in a single ipsilateral lymph node, >30 mm but not >60 mm in greatest dimension, without extranodal extension

pN2b Metastasis in multiple ipsilateral lymph nodes, none >60 mm in greatest dimension, without extranodal extension

pN2c Metastasis in bilateral or contralateral lymph nodes, none >60 mm in greatest dimension, without extranodal extension

pN3a Metastasis in a lymph node, >60 mm in greatest dimension, without extranodal extension

pN3b Metastasis in a lymph node with extranodal extension

*Defined as extension beyond the nodal capsule into the surrounding soft tissue. No stromal reaction required. Invasion into adjacent skin or fixation to adjacent structures also permitted.

There is an expectation that at least ten lymph nodes will be identified by selective lymphadenectomy and at least 15 in radicle or modified radicle lymphadenectomy.

Distant metastasis (M)

M0 No distant metastasis

M1/pM1 Distant metastatic disease

Comment: MX and pM0 do not exist

pTNM stage group

Stage	T	N	M
Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2	N0	M0
Stage III	T3	N0	M0
	T1, T2, T3	N1	M0
Stage IV	T1, T2, T3	N2, N3	M0
	T4	N Any	M0
	T Any	N Any	M1

Appendix B Cutaneous adnexal carcinoma SNOMED coding

Topographical codes	SNOMED	SNOMED CT terminology	SNOMED CT code
Skin	T01000	Skin structure (body structure)	39937001
Lymph node	TC4000 (SNOMED 3) T08000 (SNOMED 2)	Structure of lymph node (body structure)	59441001

Morphological codes	SNOMED	SNOMED CT terminology	SNOMED CT code
General codes			
Primary cutaneous adnexal carcinoma	M83903	Skin appendage carcinoma (morphologic abnormality)	64000002
Metastatic cutaneous adnexal carcinoma	M83906	No code	No code
Primary cutaneous invasive sweat gland carcinoma	M84003	Sweat gland adenocarcinoma (morphologic abnormality)	32272007
Metastatic cutaneous sweat gland carcinoma	M84006	Squamous cell carcinoma, spindle cell (morphologic abnormality)	10288008
Subtypes			
Malignant tumours with apocrine and eccrine differentiation			
Tubular carcinoma	M82113	Tubular adenocarcinoma (morphologic abnormality)	4631006
Microcystic adnexal carcinoma	M84073	Sclerosing sweat duct carcinoma (morphologic abnormality)	128896007
Malignant mixed tumour	M89403	Mixed tumour, malignant (morphologic abnormality)	8145008
Porocarcinoma	M84093	Eccrine poroma, malignant (morphologic abnormality)	128685001
Spiradenocarcinoma	M84033	Malignant eccrine spiradenoma (morphologic abnormality)	128895006
Hidradenocarcinoma	M84003	Sweat gland adenocarcinoma (morphologic abnormality)	32272007
Mucinous carcinoma	M84803	Mucinous adenocarcinoma (morphologic abnormality)	72495009

Morphological codes (continued)	SNOMED	SNOMED CT terminology	SNOMED CT code
Digital papillary carcinoma	M84083	Eccrine papillary adenocarcinoma (morphologic abnormality)	128898008
Adenoid cystic carcinoma	M82003	Adenoid cystic carcinoma (morphologic abnormality)	11671000
Apocrine carcinoma	M84013	Apocrine adenocarcinoma (morphologic abnormality)	57141000
Extramammary Paget's disease	M85423	Paget's disease, extramammary (except Paget's disease of bone) (morphologic abnormality)	71447003
Malignant tumours with follicular differentiation			
Pilomatrical carcinoma	M81103	Pilomatrix carcinoma (morphologic abnormality)	24762001
Tumours with sebaceous differentiation			
Sebaceous carcinoma	M84103	Sebaceous adenocarcinoma (morphologic abnormality)	54734006

Procedure codes

Local P codes should be recorded. At present, P codes vary according to the SNOMED system in use in different institutions.

Appendix C (Draft) UK National Histopathology Request Form for skin biopsies

Devised by the PHE Skin Site-Specific Reference Group and kindly provided for RCPath dataset information by PHE. Permission for use should be sought from the PHE. This histopathology request form has been approved by the BAD; the mode of national implementation is under consultation. This could be useful to ensure that the maximum clinical dimension of a lesion is always recorded.

The UK National Histopathology Request form for skin biopsies

Date of surgical procedure

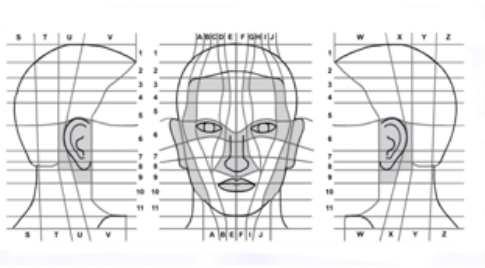
Please attach patient details

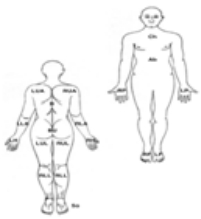
Name of surgeon

Grade of surgeon: Nurse, Specialist trainee, Consultant, Hospital Practitioner, Other

Clinical diagnosis: free text

Mandatory for Clinician to complete:	First biospy	Second	Third	Fourth
Site Code as per image (insert LUL etc)				
Clinical Diagnosis (select either BCC, SCC, Melanoma, Atypical Mole, other tumour or other). For inflammatory lesions add clinical details as free text.				
Clinical size of lesion sampled (max diameter) (mm)				
Intention of the surgeon (select *biopsy, excision or curative curettage*				
Procedure (select *curettage, shave biopsy, punch, incisional biopsy or excision)*				
For tumours give measured surgical clinical margin (mm)				
Is this a recurrent tumour?	Y/N	Y/N	Y/N	Y/N
Is the pateint immunocompromised?	Y/N			
Is this a tumour arising in areas of radiation or thermal injury, chronic draining sinuses, chronic ulcers, chronic inflammation or Bowen's Disease	Y/N	Y/N	Y/N	Y/N
Is this a tumour arising in a genetically predisposed individual?	Y/N			





Please mark site of samples taken on the above images For head and neck skin cancers the site code will be made up of the number in the horizontal grid and the letter from the vertical grid (e.g. for a tumour in the middle of the nose that might be code 8E). Where a lesion lies across grid lines then that grid reference in which the greater part of the tumour lies should be used OR if the lesion impacts on a grey shaded area or on the lips then that code should be used. Where the tumour is on the marked lips then the code LIP should be used. For tumours outside the head and neck the letters are indicated on the body map. e.g. a tumour on the left lower arm is LLA).

Free text

Appendix D1 Reporting proforma for cutaneous adnexal carcinoma removed with therapeutic intent

Surname…… Forenames……..… Date of birth…….. Sex…....

Hospital……..…….…… Hospital no…….…….. NHS/CHI no……..

Date of procedure…….. Date of receipt……..……. Date of reporting……...

Pathologist…….…… Surgeon…….……. Report no …….

Clinical data

Clinical site …….....

Maximum clinical dimension/diameter of lesion.....mm

Specimen type†:

Not stated □

Incision Diagnostic □

Excision Diagnostic □ Therapeutic □ Uncertain □ Re-excision □ Wider local excision □

Punch Diagnostic □ Therapeutic □ Uncertain □

Curettings Diagnostic □ Therapeutic □ Uncertain □

Shave Diagnostic □ Therapeutic □ Uncertain □

Other □ Specify ….....

Macroscopic description

Dimension of specimen: Length ……mm Breadth…...mm Depth …….mm

Maximum dimension/diameter of lesion†: ....… mm Uncertain □ No lesion seen □

Histological data

Histological type†: Extramammary Paget's disease □ Porocarcinoma □ Hidradenocarcinoma □
Spiradenocarcinoma □ Microcystic adnexal carcinoma □ Malignant mixed tumour □
Mucinous carcinoma □ Apocrine carcinoma □ Adenoid cystic carcinoma □
Digital papillary carcinoma □ Sebaceous carcinoma □ Pilomatrical carcinoma □
Syringoid eccrine carcinoma □ Other □ Please specify …….

Invasive component: Not identified (in situ) □ Present □

If invasive component present:

Grade†: Poorly differentiated component present No □ Yes □

Thickness: ≤6 mm □ >6 mm □ **(= deep invasion: upstage pT1/pT2 to pT3)**

Uncertain □ Cannot be assessed □

Level of invasion: Dermis □ Subcutaneous (s/c) fat □ Beyond s/c fat □ Not identified □

Uncertain □ Cannot be assessed □

If invasion beyond subcutaneous fat present: **(= deep invasion: upstage pT1/pT2 to pT3)**

Specify tissue: Fascia □ Muscle □ Perichondrium □ Cartilage □ Paratendon/tendon □ Periosteum □
Bone □

If bone invasion present:

Minor bone erosion: Present □ **(pT3)** Not identified □ Uncertain □ Cannot be assessed □

Gross cortical/marrow invasion: Present □ (**pT4a)** Not identified □ Uncertain □ Cannot be assessed □

Axial/skull base/foraminal invasion: Present □ **(pT4b)** Not identified □ Uncertain □ Cannot be assessed □

Perineural invasion: Present □ Not identified □ Uncertain □ Cannot be assessed □

If present: Meets specified upstaging criteria of pT1/pT2 to pT3 (named nerve or ≥ 0.1mm or beyond dermis)

Yes□ (**pT3)** No □

If yes: Named nerve □ ≥0.1mm □ Beyond dermis □

Lymphovascular invasion†: Present □ Not identified □ Uncertain □ Cannot be assessed □

Background benign adnexal tumour present: No □ Yes □ If yes, specify type:……..

Margins†:

	Involved	Not involved			Uncertain	Not applicable
		<1 mm	1–5 mm	>5 mm		
Peripheral	□	□	□	□	□	□
Deep	□	□	□	□	□	□

Maximum dimension/diameter of lesion

Indicate which used:

Clinical □ OR Macroscopic □ OR Microscopic □

Dimension

≤20mm □ >20 – ≤40 mm □ >40 mm □ Uncertain □ Cannot be assessed □

pTNM† pT..... (UICC TNM 8)

SNOMED codes†……..

Comments

Pathologist …….. **Date……**

†Data items that are part of the Cancer Outcomes and Services Dataset (COSD) version 8.

Appendix D2 Reporting proforma for regional lymph nodes associated with cutaneous adnexal carcinoma (including skin carcinoma of head and neck and carcinoma of skin, essentially trunk and limbs but excluding eyelid and genitals)

D2.1 Skin carcinoma of head and neck

Surname…… Forenames……..… Date of birth…….. Sex…...

Hospital……..…….…… Hospital no……..…….. NHS/CHI no……..

Date of procedure…….. Date of receipt……..…….. Date of reporting……...

Pathologist……..…… Surgeon……..……. Report no …….

Clinical data

Anatomical site: Axillary □ Inguinal □ Other □ (specify):.....

Laterality: Right □ Left □

Macroscopic description

Dimension of specimen .....mm x .....mm .....mm

Localising indicator present? Not identified □ Yes □ If yes: details.....

Macroscopic abnormality? Not identified □ Yes □ If yes: maximum dimension.....mm
Uncertain □

Macroscopic extranodal extension Not identified □ Yes □ Uncertain □

Histological data

LYMPHADENECTOMY

Number of nodes identified†.....

Nodes involved No □ Yes □

Highest/most apical node involved No □ Yes □ Not identified clinically □

If nodes are involved

IPSILATERAL

Number involved†.....…

Maximum size of metastasis ≤30 mm □ >30 mm – ≤60 mm □ >60 mm □

Extranodal extension No □ Yes □ Uncertain □ Cannot be assessed □

Margin involved No □ Yes □ Uncertain □ Cannot be assessed □

CONTRALATERAL

Number involved†.....

Maximum size of metastasis ≤30 mm □ >30 mm – ≤60 mm □ >60 mm □

Extranodal extension No □ Yes □ Uncertain □ Cannot be assessed □

Margin involved No □ Yes □ Uncertain □ Cannot be assessed □

---

pTNM† pN… (UICC TNM 8)

SNOMED codes†…….....…

COMMENTS

Pathologist…….. Date……..

†Data items that are part of the Cancer Outcomes and Services Dataset (COSD) version 8.

OR D2.2 Carcinoma of the skin (essentially trunk and limbs but excluding the eyelid and genitals)

Surname…… Forenames……..… Date of birth…….. Sex…...

Hospital……..…….…… Hospital no…….……. NHS/CHI no……..

Date of procedure…….. Date of receipt……..…….. Date of reporting……...

Pathologist…….…… Surgeon…….……. Report no …….

Clinical data

Anatomical site: Axillary □ Inguinal □ Other □ (specify):.....

Laterality: Right □ Left □

Macroscopic description

Dimension of specimen .....mm x .....mm .....mm

Localising indicator present? Not identified □ Yes □ If yes: details.....

Macroscopic abnormality? Not identified □ Yes □ If yes: maximum dimension.....mm
Uncertain □

Macroscopic extranodal extension Not identified □ Yes □ Uncertain □

Histological data

LYMPHADENECTOMY

Number of nodes identified†.....

Nodes involved No □ Yes □

Highest/most apical node involved No □ Yes □ Not identified clinically □

If ipsilateral nodes are involved

Number involved†.....…

Maximum size of metastasis ≤30 mm □ >30 mm – ≤60 mm □ >60 mm □

Extranodal extension No □ Yes □ Uncertain □ Cannot be assessed □

Margin involved No □ Yes □ Uncertain □ Cannot be assessed □

---

pTNM† pN… (UICC TNM 8)

SNOMED codes†……..……

COMMENTS

Pathologist…….. Date……..

†Data items that are part of the Cancer Outcomes and Services Dataset (COSD) version 8.

Appendix E1 Reporting proforma for cutaneous adnexal carcinoma removed with therapeutic intent in list format

Element name	Values	Implementation comments
Clinical site	Free text	
Maximum clinical dimension/diameter	Size in mm	
Specimen type	Single selection value list: • Not stated • Incision, Diagnostic • Excision, Diagnostic • Excision, Therapeutic • Excision, Uncertain • Re-excision • Wider local excision • Punch, Diagnostic • Punch, Therapeutic • Punch, Uncertain • Curettings, Diagnostic • Curettings, Therapeutic • Curettings, Uncertain • Shave, Diagnostic • Shave, Therapeutic • Shave, Uncertain • Other	
Specimen type, Other, Specify	Free text	Only applicable if 'Specimen type, Other' is selected.
Dimension of specimen, Length	Size in mm	
Dimension of specimen, Breadth	Size in mm	
Dimension of specimen, Depth	Size in mm	
Maximum dimension of lesion	Size in mm	
Lesion dimension not given, reason	Single selection value list: • Uncertain • No lesion seen • Not applicable	Not applicable if value given for 'Maximum dimension of lesion'.
Histological type	Single selection value list: • Extramammary Paget's disease	

	• Porocarcinoma • Hidradenocarcinoma • Spiradenocarcinoma • Microcystic adnexal carcinoma • Malignant mixed tumour • Mucinous carcinoma • Apocrine carcinoma • Adenoid cystic carcinoma • Digital papillary carcinoma • Sebaceous carcinoma • Pilomatrical carcinoma • Syringoid eccrine carcinoma • Other	
Subtype, Other, specify	Free text	Only applicable if 'Subtype, Other' is selected.
Invasive component	Single selection value list: • Not identified (in situ) • Present	
Grade, Poorly differentiated component present	Single selection value list: • Yes • No • Not applicable	Not applicable if 'Invasive component, Not identified' is selected.
Thickness	Single selection value list: • ≤6 mm • >6 mm • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Invasive component, Not identified' is selected.
Level of invasion	Multiple selection value list: • Dermis • Subcutaneous fat • Beyond subcutaneous fat • Not identified • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Invasive component, Not identified' is selected.

Level of invasion beyond subcutaneous fat	Multiple selection value list: • Fascia • Muscle • Perichondrium • Cartilage • Paratendon/tendon • Periosteum • Bone	Only applicable if 'Level of invasion beyond subcutaneous fat' is selected.
Minor bone erosion	Single selection value list: • Present • Not identified • Uncertain • Cannot be assessed • Not applicable	Only applicable if 'Level of invasion beyond subcutaneous fat, Bone' is selected.
Gross cortical/marrow invasion	Single selection value list: • Present • Not identified • Uncertain • Cannot be assessed • Not applicable	Only applicable if 'Level of invasion beyond subcutaneous fat, Bone' is selected.
Axial/skull base/foraminal invasion	Single selection value list: • Present • Not identified • Uncertain • Cannot be assessed • Not applicable	Only applicable if 'Level of invasion beyond subcutaneous fat, Bone' is selected.
Perineural invasion	Single selection value list: • Present • Not identified • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Invasive component, Not identified' is selected.
Perineural invasion, criteria to upstage to pT3	Single selection value list: • Yes • No	Only applicable if 'Perineural invasion, Present' is selected.
Perineural invasion, features	Multiple selection value list: • Named nerve	Only applicable if 'Perineural invasion, criteria to upstage to pT3, Yes' is selected.

	• ≥0.1 mm • Beyond dermis	
Lymphovascular invasion	Single value selection list: • Present • Not identified • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Invasive component, Not identified' is selected.
Background benign adnexal tumour present	Single selection value list: • No • Yes	
Background benign adnexal tumour present, specify	Free text	Only applicable if 'Background benign adnexal tumour present, Yes' is selected.
Margins, Peripheral	Single selection value list: • Involved • Not involved but <1 mm • Not involved 1–5 mm • Not involved >5 mm • Uncertain • Not applicable	
Margins, Deep	Single selection value list: • Involved • Not involved but <1 mm • Not involved 1–5 mm • Not involved >5 mm • Uncertain • Not applicable	.
Basis of diameter measurement	Single selection value list: • Clinical • Macroscopic • Microscopic	
Dimension	Single selection value list: • ≤20 mm • >20 – ≤40 mm • >40 mm • Uncertain • Cannot be assessed	

pT category	Single selection value list: • X • 0 • is • 1 • 2 • 3 • 4a • 4b	
TNM version	UICC8	UICC8 automatically selected.
SNOMED codes	May have multiple codes. Look up from SNOMED tables.	

Appendix E2 Reporting proforma for regional lymph nodes associated with cutaneous adnexal carcinoma (including skin carcinoma of head and neck and carcinoma of skin, essentially trunk and limbs but excluding eyelid and genitals) in list format

E2.1 Skin carcinoma of head and neck

Element name	Values	Implementation comments
Anatomical site	Single selection value list: • Axillary • Inguinal • Other	
Anatomical site, specify	Free text	Only applicable if 'Anatomical site, Other' is selected.
Laterality	Single selection value list: • Right • Left	
Dimension of specimen, dimension 1	Size in mm	
Dimension of specimen, dimension 2	Size in mm	
Dimension of specimen, dimension 3	Size in mm	
Localising indicator present	Single selection value list: • Not identified • Yes	
Localising indicator present, details	Free text	Only applicable if 'Localising indicator present, Yes' is selected.
Macroscopic abnormality present	Single selection value list: • Not identified • Yes • Uncertain	
Maximum dimension of macroscopic abnormality	Size in mm	Only applicable if 'Macroscopic abnormality present, Yes' is selected.
Macroscopic extranodal extension	Single selection value list: • Not identified • Yes • Uncertain	
Number of nodes identified	Integer	

Nodes involved	Single selection value list: • No • Yes	
Highest/most apical node involved	Single value selection list: • No • Yes • Not identified clinically • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Number involved	Integer	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Maximum size of metastasis	Single value selection list: • ≤30 mm • >30 mm – ≤60 mm • >60 mm • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Extranodal extension	Single value selection list: • No • Yes • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Margin involved	Single selection value list: • No • Yes • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Contralateral, Number involved	Integer	Not applicable if 'Nodes involved, No' is selected.
Contralateral, Maximum size of metastasis	Single value selection list: • ≤30 mm • >30 mm – ≤60 mm • >60 mm • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Contralateral, Extranodal extension	Single value selection list: • No • Yes	Not applicable if 'Nodes involved, No' is selected.

	• Uncertain • Cannot be assessed • Not applicable	
Contralateral, Margin involved	Single selection value list: • No • Yes • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Nodes involved, No' is selected.
pN category	Single selection value list: • X • 0 • 1 • 2a • 2b • 2c • 3a • 3b	
TNM version	UICC8	UICC8 automatically selected.
SNOMED codes	May have multiple codes. Look up from SNOMED tables.	

E2.2 Carcinoma of the skin (essentially trunk and limbs but excluding the eyelid and genitals)

Element name	Values	Implementation comments
Anatomical site	Single selection value list: • Axillary • Inguinal • Other	
Anatomical site, specify	Free text	Only applicable if 'Anatomical site, Other' is selected.
Laterality	Single selection value list: • Right • Left	
Dimension of specimen, dimension 1	Size in mm	
Dimension of specimen, dimension 2	Size in mm	
Dimension of specimen, dimension 3	Size in mm	
Localising indicator present	Single selection value list: • Not identified • Yes	
Localising indicator present, details	Free text	Only applicable if 'Localising indicator present, Yes' is selected.
Macroscopic abnormality present	Single selection value list: • Not identified • Yes • Uncertain	
Maximum dimension of macroscopic abnormality	Size in mm	Only applicable if 'Macroscopic abnormality present, Yes' is selected.
Macroscopic extranodal extension	Single selection value list: • Not identified • Yes • Uncertain	
Number of nodes identified	Integer	
Nodes involved	Single selection value list: • No • Yes	

Highest/most apical node involved	Single value selection list: • No • Yes • Not identified clinically • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Number involved	Integer	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Maximum size of metastasis	Single value selection list: • ≤30 mm • >30 mm – ≤60 mm • >60 mm • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Extranodal extension	Single value selection list: • No • Yes • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Nodes involved, No' is selected.
Ipsilateral, Margin not involved	Single selection value list: • No • Yes • Uncertain • Cannot be assessed • Not applicable	Not applicable if 'Nodes involved, No' is selected.
pN category	Single selection value list: • X • 0 • 1 • 2 • 3	
TNM version	UICC8	UICC8 automatically selected.
SNOMED codes	May have multiple codes. Look up from SNOMED tables.	

Appendix F Summary table – Explanation of levels of evidence

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

Level of evidence	Nature of evidence
Level A	At least one 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 cancer type 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.
Level 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 cancer type or Extrapolation evidence from studies described in A.
Level 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 cancer type or Extrapolation evidence from studies described in B.
Level 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 G AGREE II compliance 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 dataset
Scope and purpose	
1 The overall objective(s) of the guideline is (are) specifically described.	Foreword, 1
2 The health question(s) covered by the guideline is (are) specifically described.	1
3 The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described.	1
Stakeholder involvement	
4 The guideline development group includes individuals from all the relevant professional groups.	Foreword, 1
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.	1
Rigour of development	
7 Systematic methods were used to search for evidence.	Foreword
8 The criteria for selecting the evidence are clearly described.	Foreword, 1
9 The strengths and limitations of the body of evidence are clearly described.	Foreword, 1
10 The methods for formulating the recommendations are clearly described.	Foreword, 1
11 The health benefits, side effects and risks have been considered in formulating the recommendations.	Foreword, 1
12 There is an explicit link between the recommendations and the supporting evidence.	1–11
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.	1–11
16 The different options for management of the condition or health issue are clearly presented.	1–11
17 Key recommendations are easily identifiable.	1–11
Applicability	
18 The guideline describes facilitators and barriers to its application.	Foreword, 1
19 The guideline provides advice and/or tools on how the recommendations can be put into practice.	Appendices A−E
20 The potential resource implications of applying the recommendations have been considered.	Foreword
21 The guideline presents monitoring and/or auditing criteria.	12
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