| **Core/**  **Non-core** | **Element name** | **Values** | **Commentary** | **Implementation notes** |
| --- | --- | --- | --- | --- |
| Non-core | NEOADJUVANT THERAPY | Single selection value list:  • Information not provided  • Not administered  • Administered, specify type  Multi selection value list (select al  that apply):   * Chemotherapy * Radiotherapy * Targeted therapy, specify if available * Immunotherapy, specify if available | Information from the surgeon about the use of neoadjuvant therapy will help the pathologist interpret correctly the histologic findings. While the extent of tumour necrosis or post-therapy fibrosis are not currently used as an important guide to management for most types of laryngeal cancer, it is good practice to document the effects of previous treatment as part of a free text report. Pragmatically, an estimate of the amount (% tumour volume) of necrosis or fibrosis can be provided as free text. |  |
| Core | OPERATIVE PROCEDURE | Multi selection value list (select all that apply):  • Not specified  OR  • Biopsy (excisional, incisional), specify  • Resection, specify  • Neck (lymph node) dissection\*, specify  • Other, specify | The nature of the operative procedure will influence the required level of detail in the pathological report. Diagnostic/incisional biopsies will usually generate a limited set of data items compared to excision/resection specimens and, for example, the status of resection margins does not require detailed consideration for diagnostic biopsies except for very small carcinomas where the entire cancer may be present in the diagnostic specimen. | \*If a neck dissection is submitted, then a separate dataset is used to record the information. |
| Core | SPECIMENS SUBMITTED | Multi selection value list (select all that apply):  • Not specified  OR  • Trachea  • Hypopharynx   * Laryngopharyngectomy * Other, specify   • Larynx   * Endolaryngeal excision * Transoral laser excision * Supraglottic laryngectomy * Supracricoid laryngectomy * Total laryngectomy * Vertical hemilaryngectomy, specify side * Partial laryngectomy, specify type * Other, specify | **Reason/Evidentiary Support1,2**  The pathologist needs to be informed about the nature of surgery (type of specimen) so that their description and dissection are focused on selecting appropriate tissues to guide accurate cancer staging.  The following commentary is intended to assist pathologists to understand the complex anatomy of the larynx and related structures. Anatomical sites and tissue compartments of the larynx are shown in Figures 1 and 2. (see Figures 1 and 2)  The **supraglottis** includes the epiglottis, aryepiglottic fold (laryngeal aspect), arytenoid, ventricular bands (false cords) and laryngeal ventricles.  The **glottis** extends from the ventricle to approximately 1.0 cm below the free level of the true vocal cord and includes the vocal cords, anterior commissure and posterior commissure.  The **subglottis** extends from approximately 1.0 cm below the level of the true vocal cord to the inferior rim of the cricoid cartilage.  Note that transglottic carcinomas cross the ventricles in a vertical direction arising in either the glottic and/or supraglottic larynx.  The **hypopharynx** is the part of the pharynx extending from the plane of the superior border of the hyoid bone (or floor of the vallecula) to the plane corresponding to the lower border of the cricoid cartilage. The contents of the hypopharynx include:  - left and right piriform sinuses which expand bilaterally and forward around the sides of the larynx and lie between the larynx and the thyroid cartilage  - lateral and posterior hypopharyngeal walls  - postcricoid region extending from the level of the arytenoid cartilages to the inferior border of the cricoid cartilage.  The **paraglottic space** is a potential space antero-lateral and deep to the ventricles and saccules, and filled with adipose tissue and connective tissue (see Figure 1). It is bounded by the conus elasticus inferiorly, the thyroid cartilage laterally, the quadrangular membrane medially, and the piriform sinus posteriorly.  The **pre-epiglottic space** is anterior to the base of the epiglottis and filled with adipose tissue and connective tissue (see Figure 2); it is triangular in shape and is bounded by the thyroid cartilage and thyrohyoid membrane anteriorly, the epiglottis and thyroepiglottic ligament posteriorly, and the hyoepiglottic ligament at its base (see Figures 1 and 2).  **References**  1 Helliwell TR (2000). ACP Best Practice No 157. Guidelines for the laboratory handling of laryngectomy specimens. *J Clin Pathol* 53(3):171-176.  2 RCPA (The Royal College of Pathologists of Australasia). Macroscopic Cut-up Manual. Available from: <http://www.rcpa.edu.au/Library/Practising-Pathology/Macroscopic-Cut-Up/Specimen/Head-and-neck/Larynx> (Accessed 7th August 2017). | . |
| Core and  Non-core | SPECIMEN DIMENSIONS | Numeric:  • Maximum dimension  \_\_\_ mm  Non-core  • Additional dimensions  \_\_\_ mm x \_\_\_ mm | The size of a resection specimen is useful as it places the size of the tumour into the operative context. In those rare instances where specimens may be mislabelled, the size of the tissue may help to resolve any discrepancies. |  |
| Core | TUMOUR SITE | Multi selection value list (select all that apply):  • Cannot be assessed  • No macroscopically visible tumour  OR  • Trachea   * Left * Right * Midline * Laterality not specified   • Hypopharynx   * Left * Right * Midline * Laterality not specified * Piriform sinus * Postcricoid * Pharyngeal wall (posterior and/or lateral) * Other, specify   • Larynx, supraglottis   * Left * Right * Midline * Laterality not specified   Single selection value list:   * Epiglottis * Lingual aspect * Laryngeal aspect * Aryepiglottic fold * Arytenoid * False vocal cord/fold * Ventricle   • Larynx, glottis   * Left * Right * Midline * Laterality not specified   Single selection value list:   * True vocal cord/fold * Anterior commissure * Posterior commissure   • Larynx, subglottis   * Left * Right * Midline * Laterality not specified   • Other, specify including laterality | **Reason/Evidentiary Support1**  Accurate documentation of the laterality and site of the specimen and tumour avoids errors in the delivery of therapy. The site of the primary tumour is a key determinant in clinicopathological staging systems for hypopharynx and larynx.  For carcinomas that involve more than one site, the principal site of involvement should be recorded and coded; this may not be the site of origin. If required, the involvement of associated sites can be noted to help in later data analysis. Sites and subsites should be recorded according to the **Union for International Cancer Control (UICC)** nomenclature.2  **References**  1 El-Naggar AK, Chan JKC, Grandis JR, Takata T, Slootweg PJ (eds) (2017). WHO Classification of Head and Neck Tumours (4th Edition). IARC, Lyon, France.  2 International Union against Cancer (UICC) (2016). TNM Classification of Malignant Tumours (8th Edition) [Incorporating corrections see https://www.uicc.org/sites/main/files/atoms/files/UICC%208th%20Edition%20Errata\_25May2018%20final.pdf]. Brierley JD, Gospodarowicz MK, Wittekind C (eds). New York: Wiley-Blackwell. |  |
| Core | TUMOUR FOCALITY | Single selection value list:  • Unifocal  • Multifocal, specify number of tumours in specimen  • Cannot be assessed, specify |  |  |
| Core and  Non-core | TUMOUR DIMENSIONS | Numeric:  • Maximum tumour dimension (largest tumour) \_\_\_ mm  Non-core  • Additional dimensions (largest tumour)  \_\_\_ mm x \_\_\_ mm  OR  • Cannot be assessed, specify | **Reason/Evidentiary Support1,2**  The macroscopic diameter (in millimetres) should be used unless the histological extent is greater than macroscopically apparent, in which case the microscopic dimension is used. As for other tissues, measurements are made pragmatically, acknowledging distortion of tissues by fixation and processing.  For larynx, several sites rely on the presence or absence of vocal cord mobility to determine T stage; in these circumstances, only a provisional pT stage can be offered (at least pT1a, for example).  **References**  1 International Union against Cancer (UICC) (2016). TNM Classification of Malignant Tumours (8th Edition) [Incorporating corrections see https://www.uicc.org/sites/main/files/atoms/files/UICC%208th%20Edition%20Errata\_25May2018%20final.pdf]. Brierley JD, [Gospodarowicz](http://as.wiley.com/WileyCDA/Section/id-302477.html?query=Mary+K.+Gospodarowicz) MK, [Wittekind](http://as.wiley.com/WileyCDA/Section/id-302477.html?query=Christian+Wittekind) C (eds). New York: Wiley-Blackwell.  2 Amin MB, Edge S, Greene FL, Byrd DR, Brookland RK, Washington MK, Gershenwald JE, Compton CC, Hess KR, Sullivan DC, Jessup JM, Brierley JD, Gaspar LE, Schilsky RL, Balch CM, Winchester DP, Asare EA, Madera M, Gress DM, Meyer LR (eds) (2017). AJCC Cancer Staging Manual 8th ed. Springer, New York. |  |
| Core | HISTOLOGICAL TUMOUR TYPE | Multi selection value list (select all that apply):  • Squamous cell carcinoma, conventional type  • Squamous cell carcinoma, variant types  Single selection value list:   * Adenosquamous carcinoma * Basaloid squamous cell carcinoma * Papillary squamous cell carcinoma * Spindle cell squamous cell carcinoma * Verrucous squamous cell carcinoma   • Lymphoepithelial carcinoma  • Neuroendocrine carcinoma  Single selection value list   * Well differentiated neuroendocrine carcinoma * Moderately differentiated neuroendocrine carcinoma * Poorly differentiated neuroendocrine carcinoma * Small cell neuroendocrine carcinoma * Large cell neuroendocrine carcinoma   • Combined (or composite) neuroendocrine carcinoma, with squamous or adenosquamous component  • Carcinomas of Minor Salivary Glands  Single selection value list   * Adenoid cystic carcinoma, specify grade * Mucoepidermoid carcinoma, specify grade * Other, specify   • Other, specify | **Reason/Evidentiary Support1-4**  Histopathological type is important for cancer registration and prognosis, with strength of evidence varying for different types. Verrucous and papillary carcinomas tend to have a good prognosis while, adenosquamous carcinomas have a worse prognosis than conventional and spindle cell carcinomas. For most of the variants of squamous cell carcinoma, surgery with adequate margins is the main treatment. In some tumours, such as large cell neuroendocrine carcinomas, a combination of irradiation and chemotherapy is indicated.  All tumours of the hypopharynx, larynx and trachea should be given a type based on the most recent edition of the World Health Organization (WHO) Classification of Head and Neck Tumours.4  **WHO classification of tumours of the hypopharynx, larynx and tracheaa4**   | **Descriptor** | **ICD-O codes** | | --- | --- | | **Malignant surface epithelial tumours** |  | | Conventional squamous cell carcinoma | 8070/3 | | Verrucous squamous cell carcinoma | 8051/3 | | Basaloid squamous cell carcinoma | 8083/3 | | Papillary squamous cell carcinoma | 8052/3 | | Spindle cell squamous carcinoma | 8074/3 | | Adenosquamous carcinoma | 8560/3 | | Lymphoepithelial carcinoma | 8082/3 | | **Neuroendocrine tumours** |  | | Well-differentiated neuroendocrine carcinoma | 8240/3 | | Moderately differentiated neuroendocrine carcinoma | 8249/3 | | Poorly differentiated neuroendocrine carcinoma |  | | Small cell neuroendocrine carcinoma | 8041/3 | | Large cell neuroendocrine carcinoma | 8013/3 |   a The morphology codes are from the International Classification of Diseases for Oncology (ICD-O). Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour; /2 for carcinoma in situ and grade III intraepithelial neoplasia; and /3 for malignant tumours.  For salivary-type tumour arising from mucosal glands, please refer to the *ICCR Carcinomas of the major salivary glands* dataset5 for descriptors and ICD-O codes.  © WHO/International Agency for Research on Cancer (IARC). Reproduced with permission    **References**  1 Wenig BM (2002). Squamous cell carcinoma of the upper aerodigestive tract: precursors and problematic variants. *Mod Pathol* 15(3):229-254.  2 Chute DJ and Stelow EB (2010). Cytology of head and neck squamous cell carcinoma variants. *Diagn Cytopathol* 38(1):65-80.  3 Lopez F, Williams MD, Cardesa A, Hunt JL, Strojan P, Rinaldo A, Nixon IJ, Rodrigo JP, Saba NF, Mendenhall WM, Quer M, Suarez C and Ferlito A (2017). How phenotype guides management of non-conventional squamous cell carcinomas of the larynx? *Eur Arch Otorhinolaryngol*.  4 El-Naggar AK, Chan JKC, Grandis JR, Takata T, Slootweg PJ (eds) (2017). *WHO Classification of Head and Neck Tumours (4th Edition)*. IARC, Lyon, France.  5 ICCR (International Collaboration on Cancer Reporting ) *Carcinomas of the major salivary glands Histopathology Reporting Guide.* Available from: http://www.iccr-cancer.org/datasets/published-datasets/head-neck (Accessed 13th September 2018). | Value list from the WHO Classification of Head and Neck Tumours (2017).  Note that permission to publish the WHO classification of tumours may be needed in your implementation. It is advisable to check with the International Agency for Research on Cancer (IARC). |
| Core | HISTOLOGICAL TUMOUR GRADE | Single selection value list:  • Not applicable  • GX: Cannot be assessed  • G1: Well differentiated  • G2: Moderately differentiated  • G3: Poorly differentiated  • Other, specify | **Reason/Evidentiary Support1-7**  Although human papillomavirus (HPV)-associated carcinomas arising in the oropharynx are graded differently from conventional (non-HPV) carcinomas (see ICCR *Carcinomas of the nasopharynx and oropharynx* dataset8), there is insufficient evidence to justify this approach in the hypopharynx and larynx. The recommendation is that HPV assessment should not be performed except for basaloid carcinomas. The conventional grading system for classical squamous cell carcinomas should be used for all tumours at these sites.  Grading is based on the degree of resemblance of the carcinoma to the normal epithelium and follows the descriptions in the World Health Organization (WHO) classification. The most aggressive area is graded as well, moderately or poorly differentiated. This system is widely used and prognostically useful, even though it suffers from inter-observer variability and sampling problems. While most squamous cell carcinomas will be well differentiated, it is important for prognostication to separate tumours based on differentiation. Where a tumour has a varied appearance, then the highest grade (poorest differentiation) is recorded as a core data item, while the predominant pattern may be recorded as non-core data.  Squamous cell carcinoma variants (basaloid, adenosquamous, spindle cell) are considered to have intrinsic biological potential and are not graded.  For the grading of salivary-type tumour arising from mucosal glands, please refer to the ICCR *Carcinomas of the major salivary glands* dataset9 for descriptors.  **References**  1 Jakobsson PA, Eneroth CM, Killander D, Moberger G and Martensson B (1973). Histologic classification and grading of malignancy in carcinoma of the larynx. *Acta Radiol Ther Phys Biol* 12(1):1-8.  2 Roland NJ, Caslin AW, Nash J and Stell PM (1992). Value of grading squamous cell carcinoma of the head and neck. *Head Neck* 14(3):224-229.  3 Kearsley JH and Thomas S (1993). Prognostic markers in cancers of the head and neck region. *Anticancer Drugs* 4(4):419-429.  4 Snow GB, Annyas AA, van Slooten EA, Bartelink H and Hart AA (1982). Prognostic factors of neck node metastasis. *Clin Otolaryngol Allied Sci* 7(3):185-192.  5 Henson DE (1988). The histological grading of neoplasms. *Arch Pathol Lab Med* 112(11):1091-1096.  6 Sethi S, Lu M, Kapke A, Benninger MS and Worsham MJ (2009). Patient and tumor factors at diagnosis in a multi-ethnic primary head and neck squamous cell carcinoma cohort. *J Surg Oncol* 99(2):104-108.  7 El-Naggar AK, Chan JKC, Grandis JR, Takata T, Slootweg PJ (eds) (2017). *WHO Classification of Head and Neck Tumours (4th Edition)*. IARC, Lyon, France.  8 ICCR (International Collaboration on Cancer Reporting ) *Carcinomas of the nasopharynx and oropharynx Histopathology Reporting Guide.* Available from: http://www.iccr-cancer.org/datasets/published-datasets/head-neck (Accessed 13th September 2018).  9 ICCR (International Collaboration on Cancer Reporting ) *Carcinomas of the major salivary glands Histopathology Reporting Guide.* Available from: http://www.iccr-cancer.org/datasets/published-datasets/head-neck (Accessed 13th September 2018). |  |
| Core and  Non-core | EXTENT OF INVASION | **Larynx**  Multi selection value list (select all that apply)/Numeric:  • Not identified  OR  • Involves mucosa  • Involves paraglottic space  • Involves pre-epiglottic space  • Partial thickness invasion of cartilage  • Full thickness invasion of cartilage  Non-core  • Tumour thickness \_\_\_ mm  **Hypopharynx**  •Tissue layers involved, specify  Non-Core  • Tumour thickness \_\_\_ mm | **Reason/Evidentiary Support1-4**  In the larynx, the invasion of tissue compartments deep to the mucosa is important for staging. The important tissues for staging purposes are the paraglottic space, the pre-epiglottic space and the thyroid and cricoid cartilages. One of the points of distinction between T3 and T4a carcinomas is whether cartilage invasion is minor (partial) or full thickness. The absolute tumour thickness is non-core for larynx and hypopharynx.  **References**  1 Alkureishi LW, Ross GL, Shoaib T, Soutar DS, Robertson AG, Sorensen JA, Thomsen J, Krogdahl A, Alvarez J, Barbier L, Santamaria J, Poli T, Sesenna E, Kovacs AF, Grunwald F, Barzan L, Sulfaro S and Alberti F (2008). Does tumor depth affect nodal upstaging in squamous cell carcinoma of the head and neck? *Laryngoscope* 118(4):629-634.  2 Helliwell TR (2000). ACP Best Practice No 157. Guidelines for the laboratory handling of laryngectomy specimens. *J Clin Pathol* 53(3):171-176.  3 International Union against Cancer (UICC) (2016). *TNM Classification of Malignant Tumours (8th Edition)* [Incorporating corrections see https://www.uicc.org/sites/main/files/atoms/files/UICC%208th%20Edition%20Errata\_25May2018%20final.pdf]. Brierley JD, [Gospodarowicz](http://as.wiley.com/WileyCDA/Section/id-302477.html?query=Mary+K.+Gospodarowicz) MK, [Wittekind](http://as.wiley.com/WileyCDA/Section/id-302477.html?query=Christian+Wittekind) C (eds). New York: Wiley-Blackwell.  4 Amin MB, Edge S, Greene FL, Byrd DR, Brookland RK, Washington MK, Gershenwald JE, Compton CC, Hess KR, Sullivan DC, Jessup JM, Brierley JD, Gaspar LE, Schilsky RL, Balch CM, Winchester DP, Asare EA, Madera M, Gress DM, Meyer LR (eds) (2017). *AJCC Cancer Staging Manual 8th ed.* Springer, New York. |  |
| Non-core | PATTERN OF INVASIVE FRONT | Single selection value list:  • Cohesive  • Non-cohesive | **Reason/Evidentiary Support1,2**  The pattern of invasion by the carcinoma at its deep margin is of proven prognostic value for oral and oropharyngeal carcinomasand there is limited evidence that a similar approach may be of value to predict nodal metastasis for hypopharyngeal and laryngeal carcinomas. Note that the response for this data item is based on the most complex (‘worst’) area of the carcinoma. The pattern of invasion is included as a non-core data item as many head and neck pathologists include this in their personal descriptive assessment of carcinomas at all sites, and it is convenient to use it for larynx and pharynx as well, for consistency with national dataset, even though this is not supported by robust evidence of clinical impact.  **References**  1 Jakobsson PA, Eneroth CM, Killander D, Moberger G and Martensson B (1973). Histologic classification and grading of malignancy in carcinoma of the larynx. *Acta Radiol Ther Phys Biol* 12(1):1-8.  2 Brandwein-Gensler M, Smith RV, Wang B, Penner C, Theilken A, Broughel D, Schiff B, Owen RP, Smith J, Sarta C, Hebert T, Nason R, Ramer M, DeLacure M, Hirsch D, Myssiorek D, Heller K, Prystowsky M, Schlecht NF and Negassa A (2010). Validation of the histologic risk model in a new cohort of patients with head and neck squamous cell carcinoma. *Am J Surg Pathol* 34(5):676-688. | Resection specimens only, not applicable to biopsies. |
| Core | PERINEURAL INVASION | Single selection value list:  • Not identified  • Present  • Cannot be assessed, specify | **Reason/Evidentiary Support1-7**  The presence or absence of perineural invasion should be recorded, regardless of the size of the nerve. Invasion of the perineural plane is a predictor of local recurrence and nodal metastasis and may prompt consideration of adjuvant chemoradiotherapy.  The perineural plane is a potential space between the bundles of axons and the perineurium; the presence of carcinoma around a nerve (external to the perineurium) is not regarded as perineural invasion. There is some evidence that extratumoural perineural invasion is of more importance than intratumoural perineural invasion but this requires confirmation. For this dataset, either intratumoural or extratumoural invasion is regarded as a positive finding.  **References**  1 Fagan JJ, Collins B, Barnes L, D'Amico F, Myers EN and Johnson JT (1998). Perineural invasion in squamous cell carcinoma of the head and neck. *Arch Otolaryngol Head Neck Surg* 124(6):637-640.  2 Miller ME, Palla B, Chen Q, Elashoff DA, Abemayor E, St John MA and Lai CK (2012). A novel classification system for perineural invasion in noncutaneous head and neck squamous cell carcinoma: histologic subcategories and patient outcomes. *Am J Otolaryngol* 33(2):212-215.  3 Cooper JS, Pajak TF, Forastiere AA, Jacobs J, Campbell BH, Saxman SB, Kish JA, Kim HE, Cmelak AJ, Rotman M, Machtay M, Ensley JF, Chao KS, Schultz CJ, Lee N and Fu KK (2004). Postoperative concurrent radiotherapy and chemotherapy for high-risk squamous-cell carcinoma of the head and neck. *N Engl J Med* 350(19):1937-1944.  4 Bernier J, Domenge C, Ozsahin M, Matuszewska K, Lefebvre JL, Greiner RH, Giralt J, Maingon P, Rolland F, Bolla M, Cognetti F, Bourhis J, Kirkpatrick A and van Glabbeke M (2004). Postoperative irradiation with or without concomitant chemotherapy for locally advanced head and neck cancer. *N Engl J Med* 350(19):1945-1952.  5 Strojan P, Ferlito A, Langendijk JA and Silver CE (2012). Indications for radiotherapy after neck dissection. *Head Neck* 34(1):113-119.  6 Sethi S, Lu M, Kapke A, Benninger MS and Worsham MJ (2009). Patient and tumor factors at diagnosis in a multi-ethnic primary head and neck squamous cell carcinoma cohort. *J Surg Oncol* 99(2):104-108.  7 Brandwein-Gensler M, Smith RV, Wang B, Penner C, Theilken A, Broughel D, Schiff B, Owen RP, Smith J, Sarta C, Hebert T, Nason R, Ramer M, DeLacure M, Hirsch D, Myssiorek D, Heller K, Prystowsky M, Schlecht NF and Negassa A (2010). Validation of the histologic risk model in a new cohort of patients with head and neck squamous cell carcinoma. *Am J Surg Pathol* 34(5):676-688. |  |
| Core | LYMPHOVASCULAR INVASION | Single selection value list:  • Not identified  • Present  • Cannot be assessed, specify | **Reason/Evidentiary Support1,2**  Lymphovascular invasion is a relatively weak predictor of nodal metastasis.  The presence of carcinoma cells within an endothelial-lined space is the essential criterion and should be distinguished from retraction artefact. It is not necessary to distinguish between small lymphatics and venous channels.  **References**  1 Suzuki M, Suzuki T, Asai M, Ichimura K, Nibu K, Sugasawa M and Kaga K (2007). Clinicopathological factors related to cervical lymph node metastasis in a patient with carcinoma of the oral floor. *Acta Otolaryngol Suppl*(559):129-135.  2 Poleksic S and Kalwaic HJ (1978). Prognostic value of vascular invasion in squamous cell carcinoma of the head and neck. *Plast Reconstr Surg* 61(2):234-240. |  |
| Core | MARGIN STATUS | Single selection value list/text/numeric:  Invasive carcinoma  • Involved   * Specify margin(s), if possible   • Not involved   * Distance from closest margin   \_\_\_ mm   * Distance not assessable * Specify closest margin, if possible   **Carcinoma in situ/high-grade dysplasia\*\***  • Involved   * Specify margin(s), if possible   • Not involved   * Distance from closest margin   \_\_\_ mm   * Distance not assessable * Specify closest margin, if possible   •Cannot be assessed, specify | **Reason/Evidentiary Support1-12**  Margin status is a predictor of local recurrence and may require consideration of adjuvant therapy. The status of the surgical resection margin should include assessment of both invasive and in situ carcinoma.  A positive margin is one in which the carcinoma is present at the margin while the definition of a ‘close margin’ varies between published series, typically being regarded as between 3 and 5 mm. For laser resections of glottic carcinomas even 1 mm may be adequate due to the thermal damage of tissue at the margin. It is recommended that the distance from in situ or invasive carcinoma to the closest margin is recorded, if assessable. Note that comment on the deep resection margin of a laryngectomy specimen may be inapplicable unless the tumour extends close to the base of tongue or into the soft tissues of the neck.  **References**  1 Laramore GE, Scott CB, Schuller DE, Haselow RE, Ervin TJ, Wheeler R, al-Sarraf M, Gahbauer RA, Jacobs JR, Schwade JG and et al. (1993). Is a surgical resection leaving positive margins of benefit to the patient with locally advanced squamous cell carcinoma of the head and neck: a comparative study using the intergroup study 0034 and the Radiation Therapy Oncology Group head and neck database. *Int J Radiat Oncol Biol Phys* 27(5):1011-1016.  2 Zelefsky MJ, Harrison LB, Fass DE, Armstrong JG, Shah JP and Strong EW (1993). Postoperative radiation therapy for squamous cell carcinomas of the oral cavity and oropharynx: impact of therapy on patients with positive surgical margins. *Int J Radiat Oncol Biol Phys* 25(1):17-21.  3 Jacobs JR, Ahmad K, Casiano R, Schuller DE, Scott C, Laramore GE and al-Sarraf M (1993). Implications of positive surgical margins. *Laryngoscope* 103(1 Pt 1):64-68.  4 Slootweg PJ, Hordijk GJ, Schade Y, van Es RJ and Koole R (2002). Treatment failure and margin status in head and neck cancer. A critical view on the potential value of molecular pathology. *Oral Oncol* 38(5):500-503.  5 Bradley PJ, MacLennan K, Brakenhoff RH and Leemans CR (2007). Status of primary tumour surgical margins in squamous head and neck cancer: prognostic implications. *Curr Opin Otolaryngol Head Neck Surg* 15(2):74-81.  6 Laskar SG, Agarwal JP, Srinivas C and Dinshaw KA (2006). Radiotherapeutic management of locally advanced head and neck cancer. *Expert Rev Anticancer Ther* 6(3):405-417.  7 Langendijk JA, Ferlito A, Takes RP, Rodrigo JP, Suarez C, Strojan P, Haigentz M, Jr. and Rinaldo A (2010). Postoperative strategies after primary surgery for squamous cell carcinoma of the head and neck. *Oral Oncol* 46(8):577-585.  8 Hinni ML, Ferlito A, Brandwein-Gensler MS, Takes RP, Silver CE, Westra WH, Seethala RR, Rodrigo JP, Corry J, Bradford CR, Hunt JL, Strojan P, Devaney KO, Gnepp DR, Hartl DM, Kowalski LP, Rinaldo A and Barnes L (2013). Surgical margins in head and neck cancer: a contemporary review. *Head Neck* 35(9):1362-1370.  9 Brandwein-Gensler M, Teixeira MS, Lewis CM, Lee B, Rolnitzky L, Hille JJ, Genden E, Urken ML and Wang BY (2005). Oral squamous cell carcinoma: histologic risk assessment, but not margin status, is strongly predictive of local disease-free and overall survival. *Am J Surg Pathol* 29(2):167-178.  10 Alicandri-Ciufelli M, Bonali M, Piccinini A, Marra L, Ghidini A, Cunsolo EM, Maiorana A, Presutti L and Conte PF (2013). Surgical margins in head and neck squamous cell carcinoma: what is 'close'? *Eur Arch Otorhinolaryngol* 270(10):2603-2609.  11 Ansarin M, Santoro L, Cattaneo A, Massaro MA, Calabrese L, Giugliano G, Maffini F, Ostuni A and Chiesa F (2009). Laser surgery for early glottic cancer: impact of margin status on local control and organ preservation. *Arch Otolaryngol Head Neck Surg* 135(4):385-390.  12 Liao CT, Chang JT, Wang HM, Ng SH, Hsueh C, Lee LY, Lin CH, Chen IH, Huang SF, Cheng AJ and Yen TC (2008). Analysis of risk factors of predictive local tumor control in oral cavity cancer. *Ann Surg Oncol* 15(3):915-922. | \*\*High-grade dysplasia is synonymous with moderate/ severe dysplasia. |
| Non-core | COEXISTENT PATHOLOGY | Multi selection value list (select all that apply):  • None identified  OR  • Necrotizing sialometaplasia  • Infection, specify  • Dysplasia, specify type and grade  • Hyperplasia, specify  • Other, specify | This is a non-core data item to provide the pathologist with the flexibility to record any other diseases that potential impact on clinical management, such as infections. |  |
| Non-core | ANCILLARY STUDIES | Single selection value list:  • Not performed  • Performed, specify | This is a non-core data item that is intended to allow pathologists to record the use of additional investigations, particular molecular testing, the prognostic and predictive significance of which is uncertain.  The literature recognises that a very few HPV associated carcinomas may occur in the hypopharynx and larynx, but prognostic relevance is uncertain.1  **References**  1 Torrente MC, Rodrigo JP, Haigentz M, Jr., Dikkers FG, Rinaldo A, Takes RP, Olofsson J and Ferlito A (2011). Human papillomavirus infections in laryngeal cancer. *Head Neck* 33(4):581-586. |  |
| Core | PATHOLOGICAL STAGING (UICC TNM 8th edition)  TNM descriptors | Choose if applicable:  • m - multiple primary tumours  • r - recurrent  • y - post-therapy | By American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC) convention, the designation “T” refers to a primary tumour that has not been previously treated. The symbol “p” refers to the pathologic classification of the TNM, as opposed to the clinical classification, and is based on gross and microscopic examination. pT entails a resection of the primary tumour or biopsy adequate to evaluate the highest pT category, pN entails removal of nodes adequate to validate lymph node metastasis, and pM implies microscopic examination of distant lesions. Clinical classification (cTNM) is usually carried out by the referring physician before treatment during initial evaluation of the patient or when pathologic classification is not possible.  Pathologic staging is usually performed after surgical resection of the primary tumour. Pathologic staging depends on pathologic documentation of the anatomic extent of disease, whether or not the primary tumour has been completely removed. If a biopsied tumour is not resected for any reason (e.g. when technically unfeasible) and if the highest T and N categories or the M1 category of the tumour can be confirmed microscopically, the criteria for pathologic classification and staging have been satisfied without total removal of the primary cancer.  **UICC TNM 81**  Primary Tumour: Subglottis  Note that the UICC and AJCC staging differs for T3/T4a subglottic carcinomas. In the AJCC system, T3 carcinomas include those limited to larynx with vocal cord fixation and/or invasion of paraglottic space and/or inner cortex of the thyroid cartilage.  Larynx:  Normal (T1) or impaired (T2) vocal cord mobility and vocal cord fixation (T3) may only be determined clinically.  TNM Descriptors  For identification of special cases of TNM or pTNM classifications, the “m” suffix and “y” and “r” prefixes are used. Although they do not affect the stage grouping, they indicate cases needing separate analysis.  The “m” suffix indicates the presence of multiple primary tumours in a single site and is recorded in parentheses: pT(m)NM.  The “y” prefix indicates those cases in which classification is performed during or following initial multimodality therapy (i.e. neoadjuvant chemotherapy, radiation therapy, or both chemotherapy and radiation therapy). The cTNM or pTNM category is identified by a “y” prefix. The ycTNM or ypTNM categorizes the extent of tumour actually present at the time of that examination. The “y” categorization is not an estimate of tumour prior to multimodality therapy (i.e. before initiation of neoadjuvant therapy).  The “r” prefix indicates a recurrent tumour when staged after a documented disease-free interval, and is identified by the “r” prefix: rTNM.  Additional Descriptors  Residual Tumour (R)  Tumour remaining in a patient after therapy with curative intent (e.g. surgical resection for cure) is categorized by a system known as R classification, shown below.  RX Presence of residual tumour cannot be assessed  R0 No residual tumour  R1 Microscopic residual tumour  R2 Macroscopic residual tumour  For the surgeon, the R classification may be useful to indicate the known or assumed status of the completeness of a surgical excision. For the pathologist, the R classification is relevant to the status of the margins of a surgical resection specimen. That is, tumour involving the resection margin on pathologic examination may be assumed to correspond to residual tumour in the patient and may be classified as macroscopic or microscopic according to the findings at the specimen margin(s).  **References**  1 International Union against Cancer (UICC) (2016). TNM Classification of Malignant Tumours (8th Edition) [Incorporating corrections see https://www.uicc.org/sites/main/files/atoms/files/UICC%208th%20Edition%20Errata\_25May2018%20final.pdf]. Brierley JD, [Gospodarowicz](http://as.wiley.com/WileyCDA/Section/id-302477.html?query=Mary+K.+Gospodarowicz) MK, [Wittekind](http://as.wiley.com/WileyCDA/Section/id-302477.html?query=Christian+Wittekind) C (eds). New York: Wiley-Blackwell. | Note that permission to publish the TNM cancer staging tables may be needed in your implementation. It is advisable to check.  Reproduced with permission. Source: UICC TNM Classification of Malignant Tumours, 8th Edition, eds James D. Brierley, Mary K. Gospodarowicz, Christian Wittekind. 2017, Publisher Wiley-Blackwell. |
| Core | Primary tumour (pT) | Single selection value list:  • TX Primary tumour cannot be assessed  • Tis Carcinoma in situ |  | Note that the results of lymph node/neck dissection are derived from a separate dataset. |
| Core | Primary tumour: Hypopharynx | Single selection value list:  • T1 Tumour limited to one subsite of hypopharynx and/or 2 cm or less in greatest dimension  • T2 Tumour invades more than one subsite of hypopharynx or an adjacent site, or measures more than 2 cm but not more than 4 cm in greatest dimension without fixation of hemilarynx  • T3 Tumour more than 4 cm in greatest dimension, or with fixation of hemilarynx or extension to oesophageal mucosa  • T4a Moderately advanced local disease  Tumour invades any of the following: thyroid/cricoid cartilage, hyoid bone, thyroid gland, oesophagus, or central compartment soft tissue#  • T4b Very advanced local disease  Tumour invades prevertebral fascia, encases carotid artery, or invades mediastinal structures |  | # Central compartment soft tissue includes prelaryngeal strap muscles and subcutaneous fat. |
| Core | Primary tumour: Supraglottis | Single selection value list:  • T1 Tumour limited to one subsite of supraglottis with normal vocal cord mobility  • T2 Tumour invades mucosa of more than one adjacent subsite of supraglottis or glottis or region outside the supraglottis (e.g. mucosa of base of tongue, vallecula, medial wall of piriform sinus) without fixation of the larynx  • T3 Tumour limited to larynx with vocal cord fixation and/or invades any of the following:  postcricoid area, pre-epiglottic space, paraglottic space, and/or inner cortex of thyroid cartilage  • T4a Moderately advanced local disease  Tumour invades through the thyroid cartilage and/or invades tissues beyond the larynx e.g. trachea, soft tissues of neck including deep/extrinsic muscle of tongue (genioglossus, hyoglossus, palatoglossus  and styloglossus), strap muscles, thyroid, or oesophagus  • T4b Very advanced local disease  Tumour invades prevertebral space, encases carotid artery, or mediastinal structures |  |  |
|  | Primary tumour: Glottis | Single selection value list:  • T1 Tumour limited to the vocal cord(s) (may involve anterior or posterior commissure) with normal mobility  • T1a Tumour limited to one vocal cord  • T1b Tumour involves both vocal cords  • T2 Tumour extends to supraglottis and/or subglottis and/or with impaired vocal cord mobility  • T3 Tumour limited to the larynx with vocal cord fixation and/or invades paraglottic space, and/or inner cortex of the thyroid cartilage  • T4a Tumour invades through the outer cortex of the thyroid cartilage and/or invades tissues beyond the larynx e.g. trachea, soft tissues of neck including deep/extrinsic muscle of the tongue (genioglossus,hyoglossus, palatoglossus and styloglossus), strap muscles, thyroid, oesophagus  • T4b Tumour invades prevertebral space, encases carotid artery, or mediastinal structures |  |  |
| Core | Primary tumour: Subglottis | Single selection value list:  •T1 Tumour limited to subglottis  • T2 Tumour extends to vocal cord(s) with normal or impaired mobility  • T3 Tumour limited to larynx with vocal cord fixation  • T4a Tumour invades cricoid or thyroid cartilage and/or invades tissues beyond the larynx e.g. trachea, soft tissues of neck including deep/extrinsic muscles of tongue (genioglossus,hyoglossus, palatoglossus and styloglossus), strap muscles, thyroid, oesophagus  • T4b Tumour invades prevertebral space, encases carotid artery, or mediastinal structures |  |  |

**Figures**

Figure 1. Coronal section through the larynx to show the main structures and paraglottic space

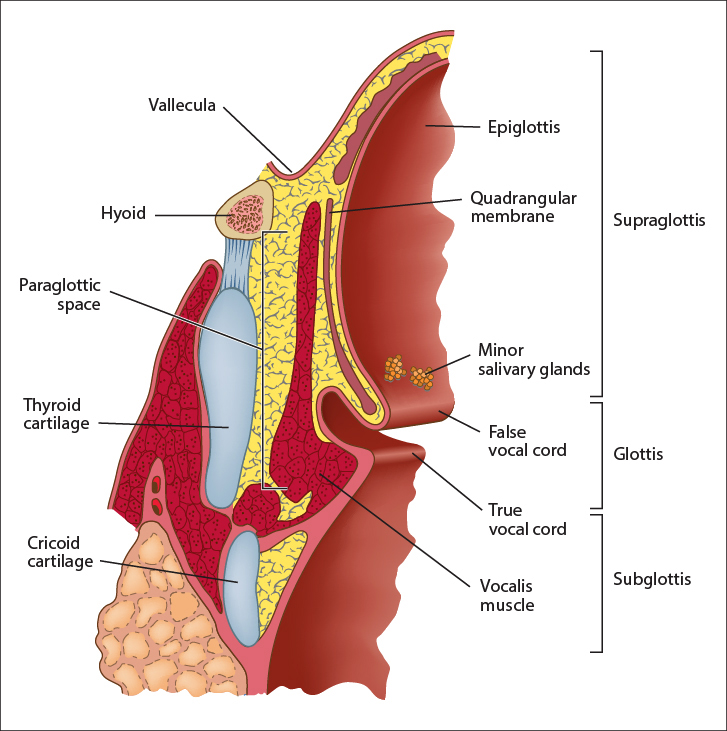
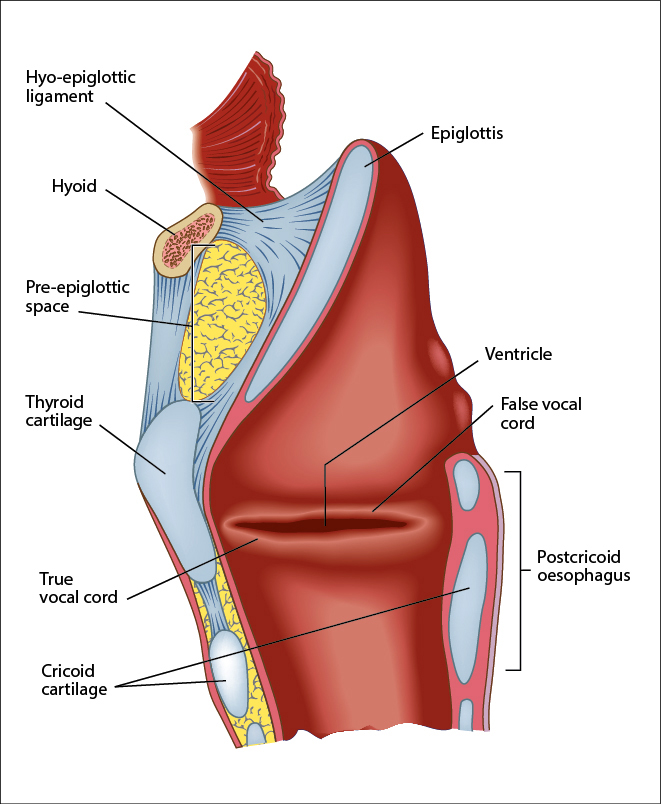
****

Figure 2. Sagittal section through the larynx to show main structures and the pre-epiglottic space

****