| **Core/****Non-core** | **Element name** | **Values** | **Commentary** | **Implementation notes** |
| --- | --- | --- | --- | --- |
| Core | SPECIMENS SUBMITTED | Multi selection value list (select all that apply):• Not specifiedOR • Debulking/curettage• Biopsy (excisional, incisional), specify• Surgical resection, specify• Neck (lymph node) dissection\*, specify• Other, specify |  | \*If a neck dissection is submitted, then a separate dataset is used to record the information. |
| Core | TUMOUR SITE | Multi selection value list (select all that apply):• Cannot be assessed**Laterality*** Right
* Laterality not specified
* Left
* Midline

• Mandible* Ramus
* Condyle
* Coronoid process
* Body
* Anterior

• Maxilla* Nasal cavity/paranasal sinus (maxillary sinus)
* Molar region alveolar process
* Premolar region alveolar process
* Incisor/canine region alveolar process
* Zygomatic process

• Extraosseous, specify site• Other, specify including laterality |  |  |
| Core andNon-core | TUMOUR DIMENSIONS | Numeric:• Maximum tumour dimension\_\_\_ mm Non-core• Additional dimensions (largest tumour) \_\_\_ mm x \_\_\_ mm OR• Cannot be assessed, specify | Due to the nature of odontogenic lesions, reference to any imaging or consultation with a radiologist is recommended and maximum tumour dimension may be determined by a combination of methods including macroscopy, specimen or clinical radiology and microscopy. Size criteria for possible staging have been suggested,1 with smaller tumour size associated with a better overall survival.2 **References**1 Yang R, Liu Z, Gokavarapu S, Peng C, Ji T and Cao W (2017). Recurrence and cancerization of ameloblastoma: multivariate analysis of 87 recurrent craniofacial ameloblastoma to assess risk factors associated with early recurrence and secondary ameloblastic carcinoma. *Chin J Cancer Res* 29(3):189-195.2 Agarwal S, Mark J, Xie C, Ghulam E and Patil Y (2016). Survival and Prognosis for Malignant Tumors of Odontogenic Origin. *Otolaryngol Head Neck Surg* 155(1):113-116. |  |
| Core | HISTOLOGICAL TUMOUR TYPE | Multi selection value list (select all that apply):• Odontogenic carcinomas* Ameloblastic carcinoma
* Primary intraosseous carcinoma, not otherwise specified (NOS)
* Sclerosing odontogenic carcinoma
* Clear cell odontogenic carcinoma
* Ghost cell odontogenic carcinoma

• Odontogenic carcinosarcoma• Odontogenic sarcomas• Other (hybrid etc.), specify• Cannot be assessed, specify | All odontogenic and maxillofacial bone tumours should be given a type based on the most recent edition of the World Health Organization (WHO) Classification of Head and Neck Tumours.1**WHO classification of odontogenic and maxillofacial bone tumoursa1**

| **Descriptor** | **ICD-O codes** |
| --- | --- |
| **Odontogenic carcinomas** |  |
| Ameloblastic carcinoma  | 9270/3 |
| Primary intraosseous carcinoma NOS | 9270/3 |
| Sclerosing odontogenic carcinoma | 9270/3 |
| Clear cell odontogenic carcinoma | 9341/3 |
| Ghost cell odontogenic carcinoma | 9302/3 |
| **Odontogenic carcinosarcoma** | 8980/3 |
| **Odontogenic sarcomas** | 9330/3 |

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. © WHO/International Agency for Research on Cancer (IARC). Reproduced with permission**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. | 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• Cannot be assessed, specify | For primary intraosseous squamous carcinoma, the conventional squamous carcinoma grade is used. | For primary intraosseous cell carcinoma only. |
| Core | NECROSIS | Single selection value list:• Not identified• Present• Cannot be assessed, specify | Necrosis is not only a tool to aid in grading of tumours, but in many instances, the presence of necrosis helps to confirm a diagnosis of malignancy in odontogenic tumours in general. Thus, while large clinical series of these rare tumours are not available, there is strong support that reporting necrosis aids in diagnosis, grade and tumour classification.1,2**References**1 Goldenberg D, Sciubba J, Koch W and Tufano RP (2004). Malignant odontogenic tumors: a 22-year experience. *Laryngoscope* 114(10):1770-1774.2 Yoon HJ, Hong SP, Lee JI, Lee SS and Hong SD (2009). Ameloblastic carcinoma: an analysis of 6 cases with review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 108(6):904-913. |  |
| Non-core | EXTENT OF INVASION | Single selection value list:• Not identified• Entirely intraosseous• Cortex perforated but extent limited by periosteum• Infiltration into soft tissue beyond the periosteum• Other, specify | Use Figure 1 ( see Figure 1) to define the sites involved. Extent of invasion is best assessed by a combination of macroscopic, microscopic and radiographic information. |  |
| Core | PERINEURAL INVASION | Single selection value list:• Not identified• Present• Cannot be assessed, specify | Note that the extensive perineural spread seen in sclerosing odontogenic carcinoma does not appear to be a poor prognostic feature.1,2 **References**1 Hussain O, Rendon AT, Orr RL and Speight PM (2013). Sclerosing odontogenic carcinoma in the maxilla: a rare primary intraosseous carcinoma. *Oral Surg Oral Med Oral Pathol Oral Radiol* 116(4):e283-286.2 Koutlas IG, Allen CM, Warnock GR and Manivel JC (2008). Sclerosing odontogenic carcinoma: a previously unreported variant of a locally aggressive odontogenic neoplasm without apparent metastatic potential. *Am J Surg Pathol* 32(11):1613-1619. |  |
| Core | LYMPHOVASCULAR INVASION | Single selection value list:• Not identified• Present• Cannot be assessed, specify |  |  |
| Core | MARGIN STATUS | Single selection value list/text/numeric:• Involved by tumour* Specify margin(s)/anatomical site, if possible

• Not involved by tumour* Distance from closest margin

\_\_\_ mm * Distance not assessable
* Specify site closest margin, if possible

• Cannot be assessed, specify | Margin status is thought to be a key prognostic item. Surgical clearance is often by only a small margin and it is important to know whether the excision is marginal around a large part of the periphery of the tumour or just focally, as reoperation may be possible.The prognosis is worse where an incomplete excision is located in the infratemporal fossa or base of skull areas and therefore the anatomical site of involved margins should be specified clearly.  |  |
| Non-core | ANCILLARY STUDIES | Single selection value list:• Not performed• Performed, specify | There are a number of immunohistochemical and molecular studies that may be relevant. Some already have potential but unproven therapeutic benefit. Examples include; EWSR1 rearrangements in clear cell odontogenic carcinoma1 and *BRAF* v600E mutation in ameloblastic carcinoma.2 Such tests may also increase diagnostic certainty and, if performed, should be recorded. **References**1 Bilodeau EA, Weinreb I, Antonescu CR, Zhang L, Dacic S, Muller S, Barker B and Seethala RR (2013). Clear cell odontogenic carcinomas show EWSR1 rearrangements: a novel finding and a biological link to salivary clear cell carcinomas. *Am J Surg Pathol* 37(7):1001-1005.2 Diniz MG, Gomes CC, Guimaraes BV, Castro WH, Lacerda JC, Cardoso SV, de Faria PR, Dias FL, Eisenberg AL, Loyola AM and Gomez RS (2015). Assessment of BRAFV600E and SMOF412E mutations in epithelial odontogenic tumours. *Tumour Biol* 36(7):5649-5653. |  |

**Figures**

Figure 1. Diagram showing anatomical sites for extent of involvement

