1. **Cancer PathCHART:** The Cancer Pathology Coding Histology and Registration Terminology (Cancer PathCHART, CPC) initiative is a ground-breaking collaboration of North American and global registrar, registry, pathology, and clinical organizations. The primary goal of Cancer PathCHART is to improve cancer surveillance data quality by updating standards for the tumor morphologies (tumor histology and behavior) that can biologically occur at each tumor site using the International Classification of Diseases for Oncology, 3rd ed. (ICD-O-3.2).

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| **Table 1: Validity Status, NAACCR EDITS, and Coding in Registry Software** | | |
| **Validity Status** | **EDITS Errors** | **Coding in Cancer Registry Database** |
| Valid | Will not generate edit errors | Can be coded |
| Unlikely | Will generate an edit error | Requires manual override or correction to site and/or morphology to be coded |
| Impossible | Will generate an edit error | Cannot be coded |

1. **The CPC Review Process:** This initiative involves a multifaceted process of reviewing tumor site-morphology combinations by expert pathologists, tumor registrars, informaticists, and cancer epidemiologists. The results of these in-depth reviews are incorporated into the Cancer PathCHART database, which serves as the single source of truth standards for tumor site, histology, and behavior coding across all cancer surveillance standard setters in North America. Through expert reviews, each tumor site-morphology combination was assigned a validity status as follows: 1=biologically valid, 2=biologically unlikely, or 3=biologically impossible (Table 1).

For tumor sites not reviewed by a given implementation year, site-morphology combination validity status was assigned using existing 2023 standards (Table 2 on page 2).For example, if the site-morphology combination was in the impossible list for 2023 standards and was not re-reviewed for 2024 or 2025, the validity status for that combination in the V2024A CPC Site-Morphology Validation List (SMVL) remained impossible in those years.

**Modifications to validity status for tumor site-morphology combinations were not applied retroactively.** For example, a 2025 site-morphology decision does not change the site-morphology validity of cases abstracted for 2024 or earlier.

| **Table 2: Standards for Tumor Sites Not Yet Reviewed** | |
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| **2023 Standard** | **Validity Status** |
| V2022 ICD-O-3 SEER Site/Histology Validation List | Valid |
| V2021 Primary Site, Morphology-Imposs ICDO3 (SEER IF38) | Impossible |
| Combinations not included in 2023 Valid or Impossible standards listed above | Unlikely |

1. **Cancer PathCHART V2024 and V2025 CPC Site Morphology Validation List (CPC SMVL) Revisions:** Since the releases of the V2024 CPC SMVL on 9/1/2023 and of the V2025 CPC SMVL on 8/5/2024, oncology data specialists have submitted questions via [Ask a SEER Registrar](https://seer.cancer.gov/registrars/contact.html) and the [SEER Inquiry System (SINQ)](https://seer.cancer.gov/seer-inquiry/) about the standards. These questions, in response to real-world cancer cases, highlighted changes that needed to be made to the validity statuses for tumor site-morphology combinations. The new V2024A\_V2025A\_V2026 CPC SMVL file incorporates standards for each of the three years as separate columns. The V2024A and V2025A standards replace the 2024 CPC SMVL and the 2025 CPC SMVL, respectively.
2. **Production of the new CPC SMVL Standards:** The following list delineates the order of applying and priority of the different resources used to produce the new validity status standards for the V2024A, V2025A, and V2026 CPC SMVL. The later items in the list overwrite earlier list items if they address the same site-type combination, such that the last list items have the highest priority for determining validity status.
3. Tumor site-morphology combinations in the *World Health Organization 5th Edition Classification of Tumours* books (Organ System WHO) were assigned a validity status of 1 for valid. Expert pathologists then established site-morphology combination validity status by site within a given organ system. Experts also reviewed the site-morphology combinations in the *World Health Organization 5th Edition Paediatric Classification of Tumours* (Pediatric WHO). If site-morphology combinations were in the Pediatric WHO but deemed impossible by experts in the other site-specific reviews, these site-morphology combinations were revised to match a more permissive Pediatric WHO decision of unlikely or valid.
4. Site-morphology combinations were reviewed across sites in an organ system for mesenchymal tumors and, separately, for germ cell tumors.
5. EDITS tables impacting site-morphology validity were identified. Information from the written descriptions and EDITS language was checked against expert reviews, and no conflicts were found at this stage. Therefore, these EDITS values were applied.

* N4911 – Histologic Type ICDO3, Primary Site, Date of Diagnosis (NAACCR)
* N2021 – Primary Site, Heme Morph, DateDX, NoOverride (SEER)
* N2022 – Primary Site, Heme Morph, DateDX, Override (SEER)
* N0446 – Glioblastomas, Gliosarcoma/Gliofibromas are impossible at certain sites (SEER)

1. When NOS and overlapping site codes were included in more than one site group and validity status for a given morphology varied across those site groups, validity status was compared across site groups. Experts determined the final site-morphology combination validity status.
2. Conflicts for site-morphology validity statuses as mentioned in D4 above and that had zero case counts in 2019 in the USCS data were identified. These site-morphology combinations were set to 2 for unlikely by default.
3. **Columns in the V2024A\_V2025A\_V2026 CPC SMVL**

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| **Table 3: Fields in V2024A\_V2025A\_V2026 CPC SMVL** | |
| **Column** | **Description** |
| **Key** | FullKey converted to an integer without leading zeros and the “C” for database indexing purposes. **Do not show this value in any user interface.** |
| **FullKey** | An auto-generated, unique row identifier, of string type, created by taking the site code, and appending the 4-digit histology code and the 1-digit behavior code |
| **C\_Site** | The ICD-O-3 topography code that identifies the primary tumor site |
| **Hist** | The 4-digit ICD-O-3.2 histology code |
| **Behavior** | The 1-digit ICD-O-3.2 behavior code |
| **CPC2024A** | An integer representing the validity status of each row's Site, Histology, and Behavior code combinations for **V2024A** The status code values are as follows 1 = Valid 2 = Unlikely (All site-type combinations not appearing in this V2024A\_V2025A\_V2026 list should be considered Unlikely) 3 = Impossible  9 = Not reviewed for Cancer PathCHART by 2024  **Use this column for cases diagnosed 1/1/2024 to 12/31/2024** |
| **Table 3 - continued: Fields in V2024A\_V2025A\_V2026 CPC SMVL** | |
| **Column** | **Description** |
| **CPC2025A** | An integer representing the validity status of each row's Site, Histology, and Behavior code combinations for **V2025A** The status code values are as follows 1 = Valid 2 = Unlikely (All site-type combinations not appearing in this V2024A\_V2025A\_V2026 list should be considered Unlikely) 3 = Impossible  9 = Not reviewed for Cancer PathCHART by 2025  **Use this column for cases diagnosed 1/1/2025 to 12/31/2025** |
| **CPC2026** | An integer representing the validity status of each row's Site, Histology, and Behavior code combinations for **V2026** The status code values are as follows 1 = Valid 2 = Unlikely (All site-type combinations not appearing in this V2024A\_V2025A\_V2026 list should be considered Unlikely)  3 = Impossible  **Use this column for cases diagnosed 1/1/2026 to 12/31/2026** |

**F. Process of CPC File Generation**

1. The CPC team created a “base CPC file” via cross-join of all possible ICD-O-3 topography (site) codes, all ICD-O-3.2 morphology codes found in the NAACCR Annotated Histology List, and the CPC review spreadsheets. Matrix rule cases found only in USCS data are not included in this release (i.e., ICD-O codes that use a behavior not found in the main ICD-O-3.2 or the 5th Edition WHO).
2. The following steps were then applied in order, as applicable for each diagnosis year (i.e., some EDITS and CPC reviews had start dates and stop dates that determine if the rules applied to V2024A CPC SMVL and/or later releases)
   1. V22 “ICD-O-3 SEER Site/Histology Validation List” (2023 release) entries were used to initialize the V2024A site-morphology matches with validity status = 1 (valid).
   2. V2021 “Primary Site, Morphology-Imposs ICD-O-3” (SEER IF38) entries were used to initialize V2024A site-type matches with validity status = 3 (impossible).
   3. N4911 rules were applied to set validity status values for V2024A.
   4. Hematolymphoid N2022 EDITS rules were applied to set validity status values for V2024A.
   5. Hematolymphoid N2021 EDITS rules were applied to set validity status values for V2024A.
   6. N0446 EDITS rule values were applied to set validity status values for V2024A.
   7. **CPC expert review values were then applied to validity statuses for the year in which the CPC review was completed** (2024-6; see Table 4 on page 7).Validity statuses from V2024A were brought forward to V2025A, unless overwritten by the V2025A review. Validity statuses from V2025A were then brought forward to V2026, unless overwritten by the V2026 review.
   8. After an interim quality check, a CPC review detected some issues with the compiled CPC review data for several site groups used in the previous step, and corrections (“upd1”) were applied.
   9. After another quality check for review decision conflicts across different site groups (e.g., kidney parenchyma and urothelial sites), some review conflicts were detected for a number of overlap sites and NOS sites. Whenever the status of a site-morphology combination pair had recent cases recorded in USCS counts, the CPC team resolved validity conflicts through expert review. Conflicting status values for site-type pairs with no cases in USCS Counts were assigned a value 2 for unlikely in most cases. Some exceptional conflicting decisions with no USCS counts (e.g., very new morphologies added after 2021) were re-reviewed to reach a consensus decision. The CPC database was then updated with these corrected values (“upd2”).
   10. A third quality review (upd3) identified additional site-morphology pairs that needed reassessment or change.
       1. 8461/3 (High-grade serous carcinoma) at C578 (Overlapping lesion of female genital organs), was made unlikely due to the complexities of the included overlapping sites. This change applies to 2024 and later years.
       2. 8046/3 (Non-small cell carcinoma) was kept valid in lung and bronchus sites but made unlikely at all other sites. This decision was made due to the variability in expert reviews across multiple site groups. Future consensus reviews for 8046/3 at the various site groups are planned. This change applies to 2024 and later years.
       3. Many new impossible combinations were noted, and these were not changed. Public comments and additional reviews will help to determine if changes are needed.
   11. Only /2 and /3 behaviors are included for non-CNS sites. To enable registration of non-malignant CNS tumors, the CPC team included ICD-O-3.2 codes with /0 and /1 behaviors for CNS sites in the CPC SMVL but excluded them from non-CNS sites.
   12. Missing site-type decisions (i.e., site groups not yet reviewed by CPC, and also not covered by an earlier status decision such as an EDITS table) were treated as “unlikely.” These “unlikely” cases are assigned status code 9 (instead of 2) in the V2024A\_V2025A\_V2026 CPC SMVL to indicate a *non-reviewed* site-type status.
   13. CPC SMVL rows that have “unlikely” site-type status codes (2 and 9) for every reviewed year (2024, 2025 and 2026) are omitted from the CPC SMVL table. This omission greatly decreases the CPC SMVL table size. Thus, any site-morphology combination not found in the CPC SMVL should be treated as having a validity status of 2 for unlikely. Cases that match those “missing” site-type combinations may be permitted after careful review and consideration and a subsequent manual EDITS override. CPC SMVL tables with all rows (and also containing columns for all review source data) are available upon request.

**G. Other Considerations**

1. When viewing the validity status for tumor site-morphology combinations, note that the current CPC SMVL release (V2024A\_V2025A\_V2026) includes standards for each year over a three-year period from 2024 to 2026 (Table 3 on pages 3 to 4). Some decisions about standards in the CPC SMVL only apply to later diagnosis years (e.g., applying only to 2025 and later, or applying only to 2026).
2. Site-morphology combinations not yet reviewed (hematolymphoid, skin, endocrine, and eye and orbit) have CPC SMVL validity status values based on the 2023 standards that predated Cancer PathCHART, as described earlier (Table 2 on page 2). Table 4 (page 7) shows which organ sites were reviewed for each implementation year.
3. Hematolymphoid morphologies are currently undergoing extensive review for implementation in 2027. Until that point, Cancer PathCHART standards are aligned with the N2021 (Primary Site, Heme Morph, DateDX, NoOverride, SEER) and N2022 (Primary Site, Heme Morph, DateDX, Override, SEER) EDITS.

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| **Table 4: Sites Reviewed by Implementation Year** | | |
| **Year** | **Organ System** | **Sites** |
| 2024 | Bone & Soft Tissue | Bones & Joints; Connective, Subcutaneous & Other Soft Tissue |
| Breast | Breast |
| Digestive | Ampulla of Vater; Anus; Appendix; Biliary System; Colon & Rectum; Esophagus; Gallbladder; Liver; Pancreas; Small Intestine; Stomach |
| Female Genital | Cervix; Endometrium; Fallopian Tube; Myometrium; Ovary; Vagina; Vulva, Adnexa & Other Female Genital; Placenta |
| Male Genital | Penis; Prostate; Testis\* |
| Urinary | Kidney\* |
| 2025 | Respiratory Tract | Lung and Bronchus; Pleura |
| Thorax | Thymus; Mediastinal Space |
| Soft Tissue | Peripheral Nerves and Autonomic Nervous System; Retroperitoneum; Heart and Pericardium |
| Male Genital System | Epididymis, Paratesticular and Spermatic cord; Testis\* |
| Urinary System | Urethra; Urothelial Sites; Paraurethral Gland; Kidney\* |
| CNS | Cerebral Hemispheres; Cerebellum; Brainstem; Ventricles; Meninges; Cranial Nerves; Spinal Cord |
| 2026 | Head and Neck | Lip, Oral Cavity and Mobile Tongue, Gingiva, Major Salivary Glands, Nasopharynx, Oropharynx, Branchial cleft, Nasal Cavity and Paranasal Sinuses, Middle Ear, Larynx and Hypopharynx, Pharynx including Waldeyer Ring, Trachea and Upper Respiratory |
| 2027 | Pending Sites | Skin, Eye and Orbit, Thyroid Gland, Adrenal Gland, Pituitary, Craniopharyngeal Duct, Pineal Gland, Parathyroid Gland, Carotid body, Aortic Body and Other Paraganglia |

\*Morphologies not reviewed for the tumor site for implementation in 2024 were reviewed for implementation in 2025.