

## Neoplasia, Nodules, Mass and Tumor Guidelines<sup>1</sup>

(Version: 5/6/2011)

**Definition:** A process representing unregulated cellular growth that can arise in any tissue type in the body.

### **Introduction:**

A pre-coordinated neoplasia disorder concept may be used. However, if the concept is not fully defined, the additional morphology or finding site should be added (per role group rules). Some systems may not have the ability to do data retrievals on pre-coordinated concept definitions, so be cautious when using pre-coordinated ones.

**Post-Coordination:** The SNOMED hierarchy for neoplasia disorders and morphology concepts are inconsistent in their linkages to behavior types. Therefore, in order to ensure retrievability, we recommend post-coordinating neoplasia using the appropriate disorder, e.g. 'Neoplasm by body site with behavior' (see 'Root Concepts' below). As previously mentioned, the associated morphology may also need to be added. (Use role grouping as per the SNOMED CT Users Guide). Most neoplasms can be captured using this method. See the cases at the end of this guideline for examples of post-coordination and role grouping.

- Finding sites: when coding body structures, stay away from human concepts such as toes and fingers whenever possible. Use neoplasm of upper and lower limb for forelimb and hindlimb.
- Multiple finding sites: When coding multiple topographies, it is recommended that each finding site be coded in order to retrieve cases based on topography.

When using a pre-coordinated disorder that already has a neoplastic morphology in its definition do not add additional neoplastic morphologies, unless it is a descendant of the one in the definition or meant to further define the morphology in the definition. Both need to be coded as separate diagnoses. Currently, VMDB will only include the neoplastic morphology that was added and ignore the one in the pre-coordinated disorder definition when providing counts.

Also, when post-coordinating a body structure, if the pre-coordinated disorder already includes a body structure in its definition, only the additional post-coordinated one will be included in a count retrieval, e.g.:

1) Lymphosarcoma of Spleen (disorder)

Spleen will be counted

2) Lymphosarcoma of Spleen (disorder)

Finding site = Vascular structure of spleen

Only Vascular structure of spleen will be counted

Avoid using ‘and/or’ concepts such as ‘adenoma and/or adenocarcinoma’. Because their behaviors differ, it may not be picked up during data retrievals for benign or malignant neoplasia.

If the record states a mass exists, that is then diagnosed as a neoplasia, only code the neoplasia. Coding both will skew the data.

Concepts regarding stages and histological grade are not currently represented in SNOMED for veterinary medicine. Therefore, it is recommended that these modifier codes not be used until systems appropriate to veterinary medicine are added to the nomenclature.

There currently is no appropriate way to link the qualifier values of ‘in remission’, ‘out of remission’, etc. to a concept so these should not be used at this time. However, there are a few finding concepts that could be used, e.g. Patient in Remission (313386006).

**Root Concept (Disorders):**

- Benign neoplastic disease (disorder) *20376005*
- Malignant neoplastic disease (disorder) *363346000*
- Neoplastic disease of uncertain behavior (disorder) *118616009*
- Secondary malignant neoplastic disease (disorder) *128462008*

## Comments:

1. Masses: A final diagnosis or finding of a mass is generally designated as such because further workup is needed to define the morphology. (See example 10).
  - Use ‘Mass of Body Structure’ (finding) (300848003) as the root and choose the appropriate “child” concept by body site, e.g.:
    - Skin mass (297960002)
  - If the specific mass by body site is not available, code ‘mass of body structure’ (300848003) and add the finding site as a role group, e.g.:
    - Mass of body structure (finding) 300848003
    - Group1
      - associated morphology (attribute) 116676008
        - mass (morphologic abnormality) 4147007
      - finding site (attribute) 363698007
        - forelimb(body structure) 116012003
  - If the pre-coordinated concept definition does not include the morphology of mass, add the associated morphology, mass (morphological abnormality, 4147007).
  
2. Nodules: Nodule is a child of ‘mass’. A pre-coordinated concept may be used. If the morphologic abnormality ‘nodule’(27925004) is not part of it’s definition, add it as a role grouped pair, e.g.
  - Mass of body structure (finding) 300848003
  - Group2\*
    - associated morphology (attribute) 116676008
      - nodule (morphologic abnormality) 27925004
    - finding site (attribute) 363698007
      - forelimb (body structure) 116012003

\* Because ‘nodule’ and ‘forelimb’ are children of the morphology and finding site in the Finding’s definition (Group1), only the new Group2 is added. In a retrieval, the computer will process Group2 and skip over group1.

3. Warts/Papillomas: Modeling of these pre-coordinated concepts in SNOMED is not consistent. Many have no morphology concepts in their hierarchy. These benign growths may be described as fibropapilloma, papilloma, animal skin wart, papillomatosis, common wart, but may not have common morphologies or parents. Fibropapillomas are pathologically different from other papillomas in that they are both derived from squamous cells and fibroblasts, as well as are induced by the papilloma virus. Therefore, these will be coded differently.
- Fibropapilloma is most common in cattle. The pre-coordinated concept is not defined as a tumor. Therefore it should be post-coordinated with the morphology, benign squamous cell tumor, 252994001 (morphologic abnormality),
  - In post-coordinating other warts/papillomas, choose a disorder with a behavior that is benign and use the morphology papilloma to describe it
    - 23730008 papilloma, no ICD-O subtype (except papilloma of bladder M-81201) (morphologic abnormality)
  - A pre-coordinated wart/papilloma finding concept may be used if it has a parent of a Benign Neoplasm
    - If missing a morphology of ‘papilloma’ or if the finding site is not part of the disorder’s definition, it should be added (using role group rules).
  - The one exception to the rule is in coding Bovine warts. Use the pre-coordinated disorder code for bovine warts (65569004) as it is already modeled with both causative agent, bovine papillomavirus, as well as morphology, squamous papillomatosis. (See example 5)
  - Camelids: Although “bovine papillomavirus” is highly suspect as the causative agent for camelid papillomatosis, no proof has yet been found to support it. Therefore, code these the same as for the non-bovine species.
4. Epulis: An epulis is usually a benign tumor, but can be locally invasive and malignant. The SNOMED hierarchy has ‘epulis’ as a child of polyp.
- Follow the neoplasia guidelines to code epulis using the appropriate morphology code following role group rules, e.g.:
    - acanthomatous epulis, malignant (88253001)
    - acanthomatous epulis benign (278399005)
    - Note: new name for acanthomatous epulis is ‘acanthomatous ameloblastoma’
    - fibromatous epulis (112673003), usually benign
    - ossifying epulis (39870007), usually benign
      - fibromatous and ossifying epulis may be considered a type of peripheral odontogenic fibroma (75914009) but there is currently no universal agreement on this

5. Vaccine-Induced Tumor: Fibrosarcoma is the common veterinary vaccine-induced tumor.
- Use the pre-coordinated concept Vaccine-Induced Fibrosarcoma (370511006) as it is fully modeled
    - add finding site if known as a role group, for example:
    - Group1
      - associated morphology (attribute)
        - fibrosarcoma (morphologic abnormality)
      - finding site (attribute)
        - neck structure (body structure)
6. Skin tags: in Veterinary Medicine is not a benign neoplasm but a Focal Epithelial Hyperplasia of Skin (416295006).

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**Examples:**

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**Case 1:** "Lipoma of the chest"

Benign neoplasm of thorax (disorder) 255059002

Group2\*

- associated morphology (attribute) 116676008
  - lipoma morphology (morphologic abnormality) 134328007
- finding site (attribute) 363698007
  - thoracic structure (body structure) 51185008

\*Group1 in the disorder's definition does not need to be added because the lipoma morphology used above is a child of the morphology in the definition, and, the same finding site is being used. We chose not to start with a disorder of Lipoma because two role groups would need to be added.

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**Case 2: "Multiple Basal Cell Tumors, skin of head and skin of back"**

Neoplasm of uncertain behavior of skin (disorder) 95087004

*Group2\**

- associated morphology (attribute) 116676008
  - basal cell tumor, uncertain whether benign or malignant (morphologic abnormality) 30649006
- finding site (attribute) 363698007
  - skin structure of head (body structure) 70762009

*Group3*

- associated morphology (attribute) 116676008
  - basal cell tumor, uncertain whether benign or malignant (morphologic abnormality) 30649006
- finding site (attribute) 363698007
  - skin structure of back (body structure) 66643007

\*Group1 in the disorder's definition is not added because the morphology and finding sites in Group2 and 3 are children of the original. A computer retrieval will overlook Group1.

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**Case 3: Mast Cell Tumor, skin of rear leg, behavior unknown**

Neoplasm of uncertain behavior of skin of lower limb (disorder) 95073004

*Group2*

- associated morphology (attribute) 116676008
  - mast cell neoplasm (morphologic abnormality) 89796001
- finding site (attribute) 363698007
  - skin structure of lower extremity (body structure) 371304004\*

Group1 in the original definition is not added because the role grouped pair in Group2 above is a descendant.

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**Case 4: "Lymphoma/Lymphosarcoma, thymic location"**

Primary malignant neoplasm of thymus (disorder) 94096009

Group2

- associated morphology (attribute) 116676008
  - malignant lymphoma – No ICD-0 subtype (morphologic abnormality) 21964009
- finding site (attribute) 363698007
  - thymus gland structure (body structure) 9875009\*

\*Group1 in the original definition is not added because the role grouped pair in Group2 above is a descendant

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**Case 5: "Warts/Papillomas, lip" (Not bovine)**

Benign neoplastic disease (disorder) 20376005

- associated morphology (attribute) 116676008
  - papilloma, no ICD-O subtype (except papilloma of bladder M-81201) (morphologic abnormality) 23730008
- finding site (attribute) 363698007
  - lip structure (body structure) 48477009\*

\*Papilloma is a descendent of the benign neoplasm morphology in the definition of the disorder. Therefore, the morphology in the definition is not added. It is role grouped with lip structure because anytime a body structure and morphology are added they should be grouped.

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**Case 6:** Equine Sarcoid, left neck, benign (per pathology report)

Benign neoplasm of neck 92246000\*

*Group1*

- associated morphology (attribute) 116676008
  - neoplasm, benign (morphologic abnormality) 3898006
- finding site (attribute) 363698007
  - neck structure (body structure) 45048000

*Group2*

- associated morphology (attribute) 116676008
  - equine sarcoid (morphologic abnormality) 21078008
- finding site (attribute) 363698007
  - structure of left half of neck (body structure) 170583000

\*Equine sarcoid is not a child of the morphology in the disorder's definition (benign neoplasm). Therefore both Group1 and Group2 are added as role groups so the computer does not ignore Group1. (The neck is not lateralized because it is not a symmetrical body structure.)

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**Case 7:** Granulocytic Leukemia, marrow and circulating blood

Myeloid leukemia (disorder) 188732008

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**Case 8:** Malignant Histiocytoses (Cases 8a-8d)

**8a** Malignant Histiocytosis, spleen\*

Malignant histiocytosis of spleen (disorder) 93189002

\*Note: The pre-coordinated concept was chosen because it is fully defined.

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**8b: Systemic Histiocytosis, chest lymph nodes, behavior unknown**

Neoplasm of uncertain behavior of lymph nodes (disorder) 94921006

*Group1*

- associated morphology (attribute) 116676008
  - neoplasm, uncertain whether benign or malignant (morphologic abnormality) 86251006
- finding site (attribute) 363698007
  - structure of lymph node (body structure) 59441001

*Group2*

- associated morphology (attribute) 116676008
  - \*histiocytic neoplasm (morphologic abnormality) 128622001
- finding site (attribute) 363698007
  - structure of lymph node of thorax (body structure) 47109002

\* Histiocytic neoplasm is not a child of the morphology in the disorder's definition (neoplasm uncertain...). Therefore both Group1 and Group2 are added as role groups so the computer does not ignore Group1.

Also, because the diagnosis refers to neoplasm here, the morphology histiocytosis (60657004) is not used as it hierarchically goes to proliferation rather than neoplasm.

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**8c: Cutaneous Histiocytosis, multiple skin sites, benign**

Benign neoplasm of skin (disorder) 92384009

*Group1*

- associated morphology (attribute) 116676008
  - neoplasm, benign (morphologic abnormality) 3898006
- finding site (attribute) 363698007
  - skin structure (body structure) 39937001

*Group2*

- associated morphology (attribute) 116676008
  - histiocytic neoplasm (morphologic abnormality) 128622001\*
- finding site (attribute) 363698007
  - skin structure (body structure) 39937001

\*The morphology concept is neither benign nor malignant; no benign concept currently exists. Also, Histiocytic neoplasm is not a child of the morphology in the disorder's definition (neoplasm uncertain...). Therefore both Group1 and Group2 are added as role groups so the computer does not ignore Group1.

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**8d:** Cutaneous Histiocytoma in a Dog, forelimb, behavior benign

Benign neoplasm of skin of upper limb (disorder) 92382008\*

Group2

- associated morphology (attribute) 116676008
  - canine cutaneous histiocytoma (morphologic abnormality) 90190005
- finding site (attribute) 363698007
  - skin structure of upper extremity (body structure) 371311000

\*Canine cutaneous histiocytoma and skin of upper extremity are children of the morphology and body structure in the disorder's definition. Therefore group1 does not need to be added here.

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**Case 9:** Metastatic carcinoma to duodenum

Secondary malignant neoplasm of duodenum (disorder) 94275007\*

Group2

- associated morphology (attribute) 116676008
  - carcinoma, metastatic (morphologic abnormality) 79282002
- finding site (attribute) 363698007
  - duodenal structure (body structure) 38848004

\*Although it may seem redundant, the morphology 'carcinoma metastatic' is used here as it is a child of the disorder's morphology; thus only Group2 needs to be added. Note: also consider coding the primary site (separately) even if the finding site is unknown.

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**Case 10:** Masses on skin of abdomen

Mass of skin (finding) 297960002 \*

Group2

- associated morphology (attribute) 116676008
  - mass (morphologic abnormality) 4147007\*
- finding site (attribute) 363698007
  - skin structure of abdomen (body structure) 75093004

\*Skin structure of abdomen is a child of the body structure in the disorder's definition. Therefore group1 does not need to be added here

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**Case 11:** Schwannoma, axillary, behavior unknown\*

Neoplasm of uncertain behavior of soft tissue of axilla (disorder) 95091009

Group1

- associated morphology (attribute) 116676008
  - neoplasm, uncertain whether benign or malignant (morphologic abnormality) 86251006
- finding site (attribute) 363698007
  - structure of axillary soft tissues (body structure) 83151009

Group2

- Associated morphology 116676008
  - \*\*Nerve sheath tumor (morphologic abnormality) 115242003
- finding site (attribute) 363698007
  - structure of axillary soft tissues (body structure) 83151009

\*Both Group1 and the newly added Group2 are added because the morphology 'nerve sheath tumor' is not a child of the morphology in the the definition 'neoplasm, uncertain whether benign or malignant'

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**Case 12:** Cutaneous Melanoma, skin of neck, behavior unknown

Neoplasm of uncertain behavior of skin of neck (disorder) 95074005

*Group1*

- associated morphology 116676008
  - neoplasm, uncertain whether benign or malignant (morphologic abnormality) 86251006
- finding site (attribute) 363698007
  - skin structure of neck (body structure) 43081002

*Group2*

- associated morphology 116676008
  - **\*\*Nevus AND/OR melanoma (morphologic abnormality) 115223002**
- finding site (attribute) 363698007
  - skin structure of neck (body structure) 43081002

\*Both Group1 and the newly added Group2 are added because the morphology ‘nevus and/or melanoma’ is not a child of the morphology in the definition ‘neoplasm, uncertain whether benign or malignant’.

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**Case 13:** Melanoma, Eye, behavior malignant\*

Malignant melanoma of eye (disorder) 274087000

\* Note: Keep in mind the pre-coordinated disorder concept is used here. However, it may not be searchable by morphology if the institution is unable to search pre-coordinated definitions. When post-coordinating follow the role grouping guidelines.

<sup>1</sup>Written by the VMDB Taskforce on Development of SNOMED Guidelines. The committee wishes to recognize contributions provided by Dr. Jeff Wilcke, Dr. Penny Livesay, and Dr. Julie Green.