



## **Draft Briefing Note: Request for Input from the EAG re: Quality Improvement for Hierarchies of 372087000 |Primary malignant neoplasm (disorder)| and 128462008 |Secondary malignant neoplastic disease (disorder)| February 2022**

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### **Summary:**

This Briefing Note will:

1) outline the problem, and describe the solution for defining primary malignant and metastatic disorder concepts. The current mechanism for defining primary malignancy and metastatic in SNOMED CT is through the 116676008 |Associated morphology (attribute)| relationship with the following morphology concepts as the value:

Subtypes of 367651003 Malignant neoplasm of primary, secondary, or uncertain origin (morphologic abnormality):

<< 86049000 Malignant neoplasm, primary (morphologic abnormality)

<< 14799000 Neoplasm, metastatic (morphologic abnormality)

Note: these morphologic abnormality concepts are also used to define Observable entity concepts via appropriate attributes for that hierarchy.

This relationship is used to define:

<< 372087000 Primary malignant neoplasm (disorder)

<< 128462008 Secondary malignant neoplastic disease (disorder)

This proposal outlines the changes needed to define primary and metastatic disorder concepts using the 370135005 |Pathological process (attribute)| relationship and the 704321009 |Characterizes (attribute)| relationship for Observable entity concepts, with the values selected from << 11495041000004108 |Proliferation of neoplasm (qualifier value)|.

2) update the terming for metastatic disorder concepts,

3) clarify ambiguous neoplastic disorder concepts. **EAG decision taken.**



## Purpose

To request input from the EAG regarding Quality Improvement changes to be made to the hierarchies of 372087000 |Primary malignant neoplasm (disorder)| and 128462008 |Secondary malignant neoplastic disease (disorder)| and related changes to the concepts 367651003 |Malignant neoplasm of primary, secondary, or uncertain origin (morphologic abnormality)|, 86049000 |Malignant neoplasm, primary (morphologic abnormality)| and |Neoplasm, metastatic (morphologic abnormality)| including its 29 metastatic subtypes. Lymphoid and hematopoietic neoplasms are excluded at this stage.

## Background

This proposal is related to the use of the 741 malignant neoplasm morphologies currently placed as subtypes of 86049000 |Malignant neoplasm, primary (morphologic abnormality)|. The historical reason for the placement of SNOMED CT neoplastic morphologies as subtypes of “Malignant neoplasm, primary” is the incorporation into SNOMED CT of the ICD coding rule that if a malignancy does not state whether it is primary or metastatic (i.e. a ‘plain’ or unspecified malignancy) it is presumed to be primary.

## Issue

For years, SNOMED International authors (including external and contracted authors), have had difficulty consistently authoring disorder concepts for malignancies that are not stated as primary, as well as metastatic malignant disorders that require use of the 741 malignant neoplasm morphologies that are currently subtypes of 86049000 Malignant neoplasm, primary (morphologic abnormality). Workarounds have been implemented. ‘Primary’ malignancy is not contained in the ICD-O-3.2 classification.

## Examples of active published concepts

(a.) Concept classifying as primary due to placement of the morphology ‘acinar cell carcinoma’ as a subtype of 86049000 |Malignant neoplasm, primary (morphologic abnormality)|:



**Parents**

➤ Primary malignant neoplasm of lung (disorder)

<p> <b>Primary acinar cell carcinoma of lung (disorder)</b> </p> <p>SCTID: 707409003</p> <p>707409003   Primary acinar cell carcinoma of lung (disorder)  </p> <ul style="list-style-type: none"> <li><i>en</i> Primary acinar cell carcinoma of lung (disorder)</li> <li><i>en</i> Primary acinar cell carcinoma of lung</li> <li><i>en</i> Acinar cell carcinoma of lung</li> </ul>	<p>Associated morphology → Acinar cell carcinoma</p> <p>Finding site → Lung structure</p>
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(b.) Concept with unspecified malignancy in FSN classifying (i.e. assumed) as primary due to placement of the morphology ‘acinar cell cystadenocarcinoma’ as a subtype of 86049000 |Malignant neoplasm, primary (morphologic abnormality)|:




Primary malignant neoplasm of lung (disorder)

<p> <b>Acinar cell cystadenocarcinoma of lung (disorder)</b> </p> <p>SCTID: 822969007</p> <p>822969007   Acinar cell cystadenocarcinoma of lung (disorder)  </p> <ul style="list-style-type: none"> <li><i>en</i> Acinar cell cystadenocarcinoma of lung (disorder)</li> <li><i>en</i> Acinar cell cystadenocarcinoma of lung</li> </ul>	<p>Associated morphology → Acinar cell cystadenocarcinoma</p> <p>Finding site → Lung structure</p>
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(c.) Concepts using the 2 role group solution currently employed for modeling ‘primary’ and ‘metastatic’ neoplasms to enable proper classification of 1) primary malignancy disorders using one of over 200 malignant morphologies not subtypes of 86049000 [Malignant neoplasm, primary (morphologic abnormality)], or 2) for metastatic disorders whose morphologies are not subtypes of 14799000 [Neoplasm, metastatic (morphologic abnormality)]:

**Parents**

-  Ependymoma of brain (disorder)
-  Primary malignant neoplasm of parietal lobe (disorder)

 **Primary ependymoma of parietal lobe (disorder)**  

SCTID: 683791000119100



683791000119100 | Primary ependymoma of parietal lobe (disorder) |




*en* Primary ependymoma of parietal lobe (disorder)  
*en* Primary ependymoma of parietal lobe

Associated morphology → Malignant ependymoma  
 Finding site → Parietal lobe structure

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Associated morphology → Malignant neoplasm, primary  
 Finding site → Parietal lobe structure

-  Carcinoid tumor (disorder)
-  Secondary malignant neoplastic disease (disorder)

 **Metastatic carcinoid tumor (disorder)**  

SCTID: 705176003

705176003 | Metastatic carcinoid tumor (disorder) |

*en* Metastatic carcinoid tumor (disorder)  
*en* Metastatic carcinoid tumor  
*en* Metastatic carcinoid tumour

Associated morphology → Neoplasm, metastatic

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Associated morphology → Carcinoid tumor - morphology



## Proposal

### Planned action:

#### 1. Modeling change

The proposed plan, developed by an internal working group, is to model primary and metastatic malignancy disorders using an additional defining relationship (Pathological process). Existing morphologic abnormalities containing either 'primary' or 'metastatic' in their FSNs will be replaced to remove that designation. The new defining relationship includes:

**Primary:** 370135005 |Pathological process (attribute)| = Malignant proliferation of primary neoplasm (qualifier value).

**Metastatic:** 370135005 |Pathological process (attribute)| = 1505291000004103 |Discontinuous metastatic spread (qualifier value)|

Note: The Observable entity concept model will use the attribute 704321009 |Characterizes (attribute)| with the same qualifier values as above. The proposal involves creating new more specific subtypes of 1204295007 |Malignant proliferation of neoplasm (qualifier value)| as required e.g. Direct local invasion of primary malignant neoplastic proliferation (qualifier value) to model content.

The screenshot shows a hierarchical view of SNOMED CT concepts. At the top level is 'Pathological process (qualifier value)'. Below it is a concept for 'Proliferation of neoplasm (qualifier value)' with SCTID 1495041000004108. This concept has several synonyms: 'Proliferation of neoplasm (qualifier value)', 'Neoplastic proliferation', 'Proliferation of neoplasm', and 'The process of a neoplasm increasing in size and/or spreading.'. Below this concept is a section titled 'Children (1)' which lists four subtypes: 'Malignant proliferation of neoplasm (qualifier value)', 'Direct local invasion (qualifier value)', 'Discontinuous metastatic spread (qualifier value)', and 'Malignant proliferation of primary neoplasm (qualifier value)'.

## Updated model example:

Primary malignant neoplasm of lateral wall of nasopharynx (disorder)					
❖	🔌	ci	Primary malignant neoplasm of lateral wall of nasopharynx (disorder)	FSN	us:P gb:P
❖	🔌	ci	Primary malignant neoplasm of lateral wall of nasopharynx	SYN	us:P gb:P
Axiom					
❖	🔌	Is a	Disease (disorder)		
❖	🔌	Finding site	Structure of lateral wall of nasopharynx (body structure)		
❖	🔌	Associated morphology	Malignant neoplasm (morphologic abnormality)		
❖	🔌	Pathological process	Primary malignant neoplastic proliferation (qualifier value)		

## 2. Terming change

### FSN/PT Metastatic 'x' SYNONYM Secondary 'x'

The 577 'secondary malignant neoplasm disorders' << 128462008 |Secondary malignant neoplastic disease (disorder)| will have the FSN changed to 'metastatic' using batch automation (The FSN/PT descriptions will be changed not inactivated).

...	❖	🔌	ci	Metastatic adenocarcinoma of abdominal lymph node (disorder)	FSN	us:P	gb:P
...	❖	🔌	ci	Metastatic adenocarcinoma of abdominal lymph node	SYN	us:P	gb:P
...	❖	🔌	ci	Secondary adenocarcinoma of abdominal lymph node	SYN	us:A	gb:A

## 3. Change to the existing primary malignant neoplasm hierarchy

There are 2423 active subtypes of 372087000 |Primary malignant neoplasm (disorder)|

- **Proposed options - EAG feedback requested** (all include adding proposed attribute and qualifier value described in the updated model section above for 'primary' and 'metastatic'):



EAG decision 23rd February, 2022:

Existing subtypes of 372087000 Primary malignant neoplasm (disorder) will be remodeled with the 370135005 Pathological process (attribute) and qualifier value relationship to new Malignant proliferation of primary neoplasm (qualifier value) if they state primary in their FSN.

If the FSN is agnostic as to whether primary or metastatic, the concept will be retained and will have 2 new subtype concepts added as necessary, one for primary malignancy and one for metastatic. These new concepts will be modeled with the proposed pathological process attribute relationship. It is unclear how current subtypes of 372087000 Primary malignant neoplasm (disorder) without 'primary' in their FSN have been interpreted by users, therefore, all three concepts 'primary x', 'metastatic x', and their parent of existing (agnostic) 'x malignancy' are required.

#### 4. Planned action continued:

##### Changes to << 108369006 |Neoplasm (morphologic abnormality)|

- ❖ Propose Inactivation of 86049000 Malignant neoplasm, primary (morphologic abnormality) and 367651003 |Malignant neoplasm of primary, secondary, or uncertain origin (morphologic abnormality)| and replacement with new Malignant neoplasm (morphologic abnormality). Also, inactivation of other morphologies with 'primary' designation and a replacement target without 'primary'; (e.g. 719952009 |Primary sarcoma (morphologic abnormality)|).
- ❖ Propose inactivation of 14799000 |Neoplasm, metastatic (morphologic abnormality)| and subtypes (e.g. 709195000 |Metastatic teratoma (morphologic abnormality)|).