Open Wounds[1]
(Version: 2/12/2011)

Definition: Tissues open to the environment, that normally are closed to the environment, e.g. lacerations, gunshot wounds, puncture wounds, abrasions, bite wounds, avulsion wounds, degloving injuries, etc.

Introduction: Select the Open Wound 'by Site' disorder concept. See 'Comments' section for exceptions dealing with Degloving injuries and Dog Bite open wounds.

- Open wound of head (disorder) *38354005*

To add more specificity to the type of 'wound' described, add the appropriate morphology to the disorder concept:

- Open wound of head (disorder) *38354005*
  Group
    - associated morphology (attribute) *116676008*
        - open laceration (morphologic abnormality) *391894009*
    - finding site (attribute) *363698007*
        - head structure *(*body structure*) 69536005*

If a pre-coordinated disorder concept by body site does not exist, use the root 'open wound' and add the appropriate finding site, for example*:

- Open wound (disorder) *125643001*
    - associated morphology (attribute) *116676008*
        - open wound (morphologic abnormality) *59091005*
    - finding site (attribute) *363698007*
        - hind digit (body structure) *116667001*

    The location is role grouped with the morphology, open wound.

Laterality (right, left, or bilateral) may be added to further define a concept:

- Open wound (disorder) *125643001*
  Group
    - associated morphology (attribute) *116676008*
        - open wound (morphologic abnormality) *59091005*
    - finding site (attribute) *363698007*
        - hind digit (body structure) *116667001*
    - laterality (attribute) *272741003*
        - right (qualifier value) *24028007*

A pre-coordinated disorder concept may be used only if it is modeled completely, e.g. the concept is modeled to an 'Open Wound' disorder hierarchy and it contains the correct morphology in its definition, which corresponds to the open wound hierarchy. For example, Puncture Wound of Back disorder or Laceration of Shoulder disorder. See 'Comments' for additional guidelines dealing with Lacerations.

Root Concept (Disorders):

- Open wound (disorder) *125643001*

Comments:

1. Degloving injuries: Pre-coordinated 'Degloving injury' (disorder) concepts may be used (see example 1). These concepts are consistently modeled to 'open wound' with the exception of 'Degloving injury to penis' (see example 2 for suggested coding). Therefore, retrievals for degloving injury cases would need to be obtained using the root 'Degloving Injury (disorder)' and include its children.

2. Dog Bite open wounds: Pre-coordinated 'Dog Bite wound' (disorder) concepts may be used (see example 7). These are consistently modeled to 'Open Wound' concepts. **Note:** dog bite wounds can be either open or closed wounds (see example 8).

3. Lacerations: These disorders are inconsistently modeled to 'Open Wound' (disorder) concepts. Therefore, it is recommended to code this disorder 'Open Wound by site' and post-coordinate the concept using the morphology concept of 'Open Laceration'. This morphology concept is modeled to both 'laceration and open wound' hierarchies (see example 10a and 10b).

4. Avulsion injuries: These disorders are inconsistently modeled to 'Open Wound' concepts. Therefore it is recommended to code this disorder 'Open Wound by site' and post-coordinate the concept using the morphology concept of 'Avulsion'.

5. Avoid using open wound 'with or without complication' concepts. Currently these are not modeled to 'with' or 'without' relationships. Complications of a wound should be coded using the morphology describing the complication (see example 3). The exception to this is for 'infections'; these should be coded separately from the open wound as 'infection' in SNOMED is a disorder rather than a morphology (see example 4a).

6. For a wound abscess, where an open wound is no longer present (i.e. healing, scabbed over, etc.), use the Wound Abscess (disorder) concept and post-coordinate if appropriate.

7. Other injuries should be coded separately from the open wounds, e.g. burns, contusions, crushing injuries, retained bullet-foreign body, and tendon injury, etc. that are not considered open wounds in SNOMED (see example 4b and 5)

8. The multiple open wounds hierarchy is inconsistent. There is no root disorder called 'multiple open wounds'. And, many of the multiple open wound disorders do not have a morphology of 'multiple open wounds'. Therefore, it is recommended to code the disorder 'Open wound by site' and add the morphology 'multiple open wounds'. (See example 6) <u>Note</u>: If different types of wounds are involved, each morphology needs to be coded separately and grouped with the proper location, e.g. lacerations, puncture wounds, abrasions, etc.

9. Abrasions, bite wounds, etc. may in reality be either open or closed. Most of these morphologies are not descendants of 'open wound'. Therefore, if coding a <u>closed wound</u> such as a closed abrasion, contusion, bite wound etc**.** make sure to <u>not</u> post-coordinate to an 'open wound' disorder, and, that the definition does not contain an open wound morphology. (See example 8).

<u>Examples</u>:

Case 1: "Degloving injury of ankle"

Degloving injury of ankle (disorder) *210703001*

Case 2: "Degloving injury of penis"

Degloving injury of genitalia (disorder) *283849006*
  Group 3
   • associated morphology (attribute) *116676008*
      o degloving injury (morphologic abnormality) *416738009*
   • finding site (attribute) *363698007*
      o skin of shaft of penis (body structure) *244118007*

Note: The pre-coordinated disorder, Degloving injury of penis, is NOT used because it does not have a parent of open wound. The new role grouped pair with the more specific body structure, which is a child of 'skin and subcutaneous tissue structure of genitalia' in the disorder's definition is added.

Case 3: "Open wound of hind limb with tissue necrosis"

Open wound of lower limb (disorder) *26947005**
  Group2

> o   associated morphology (attribute) *116676008*
>   ▪   open wound (morphologic abnormality) *59091005*
> o   finding site (attribute) *363698007*
>   ▪   hindlimb structure (body structure*)116013008*

  Group3

> o   associated morphology (attribute) *116676008*
>   ▪   necrosis (morphologic abnormality)   *6574001*
> o   finding site (attribute) *363698007*
>   ▪   hindlimb structure (body structure*) 116013008*

*The necrosis morphology is not a child of open wound, therefore both the original role grouped pair and the new role grouped pair with necrosis are added. Hindlimb structure was used to better define the location; it is a child of lower limb.

Case 4a: "Gunshot wound to face (jaw) with infection"

1) Open wound of jaw (disorder) *210345001**
  •   causative agent (attribute*) 246075003*
> o   bullet, device (physical object) *86122002*
  Group2
> o   associated morphology (attribute) *116676008*
>   ▪   gunshot wound (morphologic abnormality) *56768003*
> o   finding site (attribute) (363698007)
>   ▪   jaw region structure (body structure) *661005*

*Causative agent of bullet is added because pre-coordinated gunshot wounds are defined by bullet. Only the additional role group pair is added because 'gunshot wound' is a child of the open wound morphology in the original.

2) Local infection of wound (disorder) *76844004**
    Group1
> o   associated morphology (attribute) *116676008*
>   ▪   wound (morphologic abnormality) *13924000*
> o   finding site (attribute) *363698007*
>   ▪   jaw region (body structure) *661005*

*The precoordinated disorder was not role grouped because no location was provided. Because we added a body structure, it should be role grouped with the morphology.

Case 4b: "Gunshot wound to head, with retained bullet"

1) Open wound of head (disorder) *38354005**
- causative agent (attribute) *246075003*
    - o   bullet, device (physical object) *86122002*

  Group2
    - o   associated morphology (attribute) *116676008*
        - ▪   gunshot wound (morphologic abnormality) *56768003*
    - o   finding site (attribute) 363698007
        - ▪   head structure (body structure*) 69536005*

**Causative agent of bullet is added because pre-coordinated gunshot wounds are defined by bullet. Only the additional role grouped pair (Group2) is added because gunshot wound (morphology) is a descendent of open wound (morphology) in the original role group.

2) Foreign Body in Head (disorder) *386082004**

  Group2
    - o   associated morphology (attribute) *116676008*
        - ▪   retained foreign body (morphologic abnormality) *125245002*
    - o   finding site (attribute) 363698007
        - ▪   head structure (body structure*) 69536005*

 * The morphology, retained foreign body, is a descendent of the morphology in the original role grouped pair, therefore, only the new role grouped pair has been added; a retrieval will ignore the parent 'foreign body'.

Case 5:   "Open wound of thorax with pulmonary contusions"

1)   Open wound of chest wall (disorder) *127314000*

2)   Contusion of lung (disorder) *262784001*

Case 6: "Multiple abrasions, back with breakage of skin"

Open wound of back (disorder) *269169002**

   Group2

- o associated morphology (attribute) *116676008*
    - ▪ abrasion (morphologic abnormality) *400061001*
- o finding site (attribute) *363698007*
    - ▪ back structure, including back of neck (body structure) *281213008*

   Group3

- o associated morphology (attribute) *116676008*
    - ▪ multiple open wounds (morphologic abnormality) *19571008*
- o finding site (attribute) 363698007
    - ▪ back structure, including back of neck (body structure) *281213008*

*Role grouped to include the abrasion morphology as well as the added morphology of multiple open wounds which is more specific than just the open wound morphology in the definition. The multiple open wounds morphology reveals to the end user that there are multiple wounds on the back. If there were multiples in different locations, each location would have been added.

Case 7: "Dog bite of back"

Dog bite of back (disorder) *283760006*

Note: This disorder concept has 'Open Wound' as its parent; its morphology is 'dog bite'.

Case 8: "Dog bite of neck region, no breakage of skin"

Animal bite of neck (disorder) *283800004*

Note: 'This is an example of a closed wound. This disorder concept has 'injury' as its parent, not open wound. Its morphology is 'animal bite', not open wound. (<u>Do not </u>use 'dog bite" morphology since its parent is 'open wound')

Case 9: "Cat bite of back, breakage of skin"

Open wound of back (disorder) *269169002*

  Group1

- associated morphology (attribute) *116676008*
  - open wound (morphologic abnormality) *59091005*
- finding site (attribute) *363698007*
  - back structure, including back of neck (body structure) *281213008*

  Group2

- associated morphology (attribute) *116676008*
  - animal bite (morphologic abnormality) *31986002*
- finding site 'attribute' (363698007)
  - back structure, including back of neck (body structure) *281213008*

- Due to *42752001*
  - cat bite (event) *217701002*

Note: 'This is an example of an animal bite wound, excluding dog bite. The 'cat bite (event) is added because no morphology for cat bite exists.   Open wound is also role grouped in this example because 'animal bite' morphology is not a child of an open wound.

Case 10a: "Laceration of back"

Open wound of back (disorder) *269169002**

  Group2

- associated morphology (attribute) *116676008*
  - open laceration (morphologic abnormality) *391894009*
- finding site (attribute) *363698007*
  - back structure, including back of neck (body structure) *281213008*

* Because the morphology is more specific than the morphology in the definition of the disorder, only the 1 role group pair has been added; a retrieval will ignore the parent 'open wound'.

Case 10b: "Corneal Laceration"

Open wound of eyeball (disorder) *85100000*

  Group2

- associated morphology (attribute) *116676008*
  - open laceration (morphologic abnormality) *391894009*
- finding site (attribute) *363698007*
  - corneal structure (body structure) *28726007*

Note: The pre-coordinated disorder of "Corneal Laceration" is NOT used because it does not have a parent of open wound. A more specific role grouped pair than the definition of the disorder is used; both the morphology and body structure are children of those in the definition.