

## **Fractures**<sup>1</sup> (Version: 06/15/12)

**Definition:** Fractures of the skeletal system.

**Introduction:** Select the fracture disorder concept that most closely describes the affected bone, fracture site and whether the fracture is open or closed.

- Open fracture of femur (disorder) *28576007*

If a pre-coordinated disorder concept for the specific affected bone site does not exist, add the appropriate finding site, following relationship (role) group guidelines, for example:

- Open fracture of femur (disorder) *28576007*
  - associated morphology (attribute) *116676008*
    - fracture, open (morphologic abnormality) *52329006*
  - finding site (attribute) *363698007*
    - bone structure of shaft of femur (body structure) *41111004*

If a pre-coordinated disorder concept for the fracture morphology does not exist, or if additional morphologies are necessary, add as follows:

- Open fracture of femur (disorder) *28576007\**
  - associated morphology (attribute) *116676008*
    - open greenstick fracture (morphologic abnormality) *441627006\**
  - finding site (attribute) *363698007*
    - bone structure of femur (body structure) *71341001*

\*Role grouping exists in the disorder's definition. Because the newly added morphology is a child of the original, only the new grouping is added.

Also, when the appropriate disorder concept 'Open or Closed Fracture' does not exist, it may be necessary to use the disorder concept "Fracture of 'specific bone'" and add the 'open or closed' specific fracture morphology. This is a common practice for veterinary specific sites.

Laterality (right, left, or bilateral) may be added to further define the concept. If the disorder requires role grouping, the laterality should be added to the appropriate role grouped pair:

- Open fracture of femur (disorder) *28576007*
  - associated morphology (attribute) *116676008*
    - fracture, open (morphologic abnormality) *52329006*
  - finding site (attribute) *363698007*
    - bone structure of femur (body structure) *71341001*
  - laterality (attribute) *272741003*
    - right (qualifier value) *24028007*

Note: You can only lateralize a bone you have more than one of symmetrically, e.g. Fracture right skull cannot be lateralized. You would need to add a finding site of right side of head.

### **Root Concept (Disorders):**

- Fracture of bone (disorder) *125605004*

### **Comments:**

1. Avoid using pre-coordinated concepts with multiple fracture topographies as it is difficult to further define a specific fracture site with a specific fracture

morphology, e.g. spiral fracture of tibia and comminuted fracture of fibula (See example 2 below).

2. Attempt to use codes without 'human orientation'. Instead of finger, toe, hand, foot, etc., use for example, Fracture of phalanx and add a finding site. Be creative when searching for veterinary topographies (equine sites are often listed under common or lay terms, e.g. pastern/coffin bones. and bovine topographies are listed as abbreviations, e.g. P1 of ruminant digit, P2..., etc. However, it is sometimes necessary to use comparable human terminology as these are the only options, e.g. tarsal bones = ankle and carpal bone = wrist. One can always go up the tree to Fracture of upper or lower limb and add a finding site.

### **Examples:**

**Case 1:** "Compression fracture sacral, open"

Open Compression Fracture Sacrum (disorder) *207978006*

**Case 2:** "Tibia spiral fracture with comminuted fracture of fibula"

1) Fracture of tibia (disorder) *31978002\**

- associated morphology (attribute) *116676008*
  - fracture, spiral (morphologic abnormality) *73737008*
- finding site (attribute) *363698007*

bone structure of tibia (body structure) *12611008*

2) Fracture of fibula (disorder) *75591007\**

- associated morphology (attribute) *116676008*
  - fracture, comminuted (morphologic abnormality) *13321001*

- finding site (attribute) *363698007*
  - bone structure of fibula (body structure) *87342007*

\*Role grouping exists in these disorders' definitions. Because the newly added morphology is a child of the original only the new grouping is added.

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