How ICD-10 is used: WHO Guidelines for coding morbidity with ICD-10

Purpose

The purpose of this page is to provide basic information on how ICD-10 is intended to be used for coding diseases according to WHO Guidelines and rules.

Guidelines and rules are necessary when coding with ICD-10 given its nature, a classification system of diseases and other health problems ("A classification of diseases can be defined as a system of categories to which morbid entities are assigned to according to established criteria") and its final aim of serving the analysis of the general health situation of population groups and monitoring the incidence and prevalence of diseases and other health problems in relation to other variables such as the characteristics and circumstances of the individuals affected.

Consequently, as a statistical classification, it contains a limited number of mutually exclusive categories; categories that are chosen to facilitate the statistical study of the disease. That necessary grouping characteristic of the classification makes indispensable putting in place guidelines and rules to classify a morbid entity to one category or another as well as the existence of the so-called residual categories for other and miscellaneous conditions that cannot be allocated to the more specific ones.

The coding process using ICD-10 in brief

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WHO Guidelines

Basic coding guidelines

1. The basic rule to decide which category should be used when coding with ICD-10 is that the "special disease" categories take priority over the body system categories:

Most Chapters in ICD-10 are associated with particular body systems (e.g. Chapter XI relates to Diseases of the digestive system, Chapter X is for Diseases of the respiratory system), but there are also some special disease Chapters, which are used to capture types of diseases that might affect either the whole body or many different sites or are considered systemic (e.g. Chapter II Neoplasms, Chapter XV Pregnancy, Childbirth and the Puerperium).
Additionally, Chapter XX is used for coding External causes of morbidity and mortality and Chapter XXI for coding Factors influencing health status and contact with health services. Chapter XVIII is used to code Symptoms signs and abnormal clinical and laboratory findings, not elsewhere classified.

The three-character codes or core codes are used for international reporting or comparisons.

The number of three-character categories assigned to a Chapter is influenced by the number and type of diseases and conditions that fall within the scope of that Chapter.

Most of the Chapters have a single letter assigned to them and use most of the 100 categories available:

<table>
<thead>
<tr>
<th>Chapter XI: Diseases of the digestive system (K00-K93)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition: Certain conditions originating in the perinatal period (P00-P96)</td>
</tr>
<tr>
<td>Definition: Certain infectious and parasitic diseases (A00-B99)</td>
</tr>
<tr>
<td>Definition: Neoplasms (C00-D48)</td>
</tr>
<tr>
<td>Definition: Diseases of the circulatory system (D50-E87)</td>
</tr>
<tr>
<td>Definition: Diseases of the respiratory system (J00-J97)</td>
</tr>
<tr>
<td>Definition: Diseases of the alimentary tract and related organs (K00-K52)</td>
</tr>
<tr>
<td>Definition: Diseases of the genitourinary system (N00-N97)</td>
</tr>
<tr>
<td>Definition: Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)</td>
</tr>
</tbody>
</table>

This chapter contains the following blocks:

- K00-K08: Diseases of oral cavity, salivary glands, and jaws
- K09-K10: Diseases of organs and accessory organs of eyes
- K11-K19: Diseases of ear and mastoid process
- K20-K29: Diseases of nose and paranasal sinuses
- K30-K42: Diseases of oral and maxillofacial regions
- K43-K45: Diseases of appendix
- K46-K51: Diseases of stomach
- K52-K62: Diseases of duodenum
- K63-K68: Diseases of small intestine
- K69-K74: Diseases of large intestine
- K75-K76: Diseases of anus
- K80-K85: Diseases of gallbladder, bilary tract, and pancreas
- K86-K93: Other diseases of the digestive system

for example, Chapter XI contains codes ranging from K00 to K93 - the codes ranging from K94 to K99 have not been used and have been left vacant for future additions to the classification.

Whenever possible, coding should be done at the four-character level; in general, always code as specifically as possible.

Most three-character categories are further subdivided into sub-categories to enable coding of a disease or condition more specifically. The fourth character ranges from 0 to 9, although not all of them may be used. The classification is designed so fourth characters are added to the core codes only as needed to give specificity to describe individual diseases or disease groups.

Furthermore, some four-character codes have an optional character to add more specificity: these are captured in a supplementary character position, usually a fifth character on an existing four-character code (see end of page). This is the case in Chapter XII Diseases of the musculoskeletal system and connective tissue, where an optional character may add detail about the site of the musculoskeletal involvement.

Not all codes in ICD-10 have four-characters. For example, the code for Parkinson's disease is G20, it has not four characters, but is complete at the three-character code level.

**Definitions**

- **Main condition**: the condition, diagnosed at the end of the episode of healthcare, primarily responsible for the patient's need for treatment or investigation.
  - If there is more than one such condition, the one held most responsible for the greatest use of resources should be selected.
  - If no diagnosis was made, the main symptom, abnormal finding, or problem should be selected as the main condition.

- **Other condition(s)**: medical records should, whenever possible, include in addition to the main condition, other conditions or problems dealt with during the episode of healthcare. They are defined as those conditions that coexist or develop during the episode of healthcare and affect the management of the patient.
  - Conditions related to an earlier episode that have no bearing on the current episode should not be recorded.
Chapter XXII contains Codes for Special Purposes:

- the first half of the Chapter (codes U00-U49) is used for the Provisional assignment of new diseases of uncertain aetiology
- codes in the second half of the Chapter may be added by individual countries to capture details about particular diseases in which they have a particular interest but which do not have unique codes in the rest of the classification; these codes cannot be used for international comparison or reporting.

The coding process in detail

1. Identify the type of statement to be coded and refer to the appropriate section of the Alphabetical Index:
   - If the statement is a disease or injury or other condition classifiable to Chapters I-XIX or XIX-XX, consult Section I of the Index
   - If the statement corresponds to the external cause of an injury or other event classifiable to Chapter XX (External causes of morbidity and mortality), consult Section II

2. Locate the lead term.
   - For diseases and injuries, this is usually a noun for the pathological condition. However, some conditions expressed as adjectives or eponyms are included in the Alphabetical Index as lead terms.

3. Follow the guide and notes that appear under the lead term.

4. Read any terms between parentheses after the lead term - these modifiers do not affect the code number - as well as any term indented under the lead term - these modifiers may affect the code number, until all the words in the diagnostic expression have been taken into account.

5. Follow carefully any cross-references ("see" and "see also") indicated in the Alphabetical index.

6. Go to the Tabular list to verify the suitability of the code number selected. A three-character code in the Alphabetical index presenting a dash in the fourth position indicates that there is a fourth character to be found in Volume 1; additionally, further subdivisions in supplementary character position are not indexed and, if used, need to be located in Volume 1.

7. Follow any inclusion/exclusion terms under the selected code, Chapter, block, or category heading. Pay attention to guidance given by Chapter-specific notes.

Coding conventions:

- The Tabular list (Volume 1) contains abbreviations, punctuations, symbols, and other instructional terms - called coding conventions - that help ensure coding consistency by all users.

Examples:

- **Inclusion terms** within Chapters, blocks, and three- and four-character rubrics, a number of other diagnostic terms are listed in addition to the code title; they are given as examples of diagnostic statements or terms to be classified to that code range or rubric indicated. The correct code to be assigned is provided between parentheses following the description.

- **Exclusion terms** certain Chapters, blocks, three- and four-character rubrics contain lists of conditions preceded by the word 'Excludes'; these are conditions that are coded elsewhere, not within the Chapter, code range or rubric indicated. The correct code to be assigned is provided between parentheses following the description.
NOS stands for Not Otherwise Specified and indicates when a disease/injury belongs if it is not qualified or there is no further information to allow the coder to use a more specific three- or four-character code. It is recommended not to code a diagnosis as unqualified unless it is clear that no other information is available to allow a more specific code assignment elsewhere in the classification.

- NEC stands for Not Elsewhere Classified; it alerts the coder to consult the Index or the inclusion and exclusion notes because other conditions which include the same terms are to be found classified elsewhere, often in other Chapters.

- Dagger and asterisk convention is a dual coding system that allows creating combinations of codes through attachment of daggers and asterisks to describe a condition in terms of its underlying cause or aetiology (†) and its current manifestation (*). Using this convention, two codes will be assigned for diagnoses that contain information about both an underlying generalized disease and a manifestation in a particular organ or site, which is a clinical problem in its own right.

As a rule, the dagger code is the primary code and must always be used for single condition coding. An asterisk code should never be used alone. In practice, the two symbols (the dagger and the asterisk) do not need to be included along with the codes, although, the two codes should be recorded in that order and if only one code can be present, it should be the dagger or aetiology code.

- "And" in code titles in Volume 1 of ICD-10, "and" stands for "and/or". In the example below, S49.9, means an unspecified injury of shoulder or unspecified injury of upper arm or unspecified injury of shoulder and upper arm.

- Point dash when a point dash (.-) is used as replacement for the fourth character of a subcategory, it means that the fourth character exists and should be looked up in the appropriate category in the Tabular List to complete the code.

"NOS" is the abbreviation for 'not otherwise specified', i.e. 'unspecified' or 'unqualified'.

WHO encourages coders not to code a term as unqualified unless it is clear that no information is available that would permit a more specific assignment elsewhere.

Sometimes, an unqualified term is nevertheless classified to a rubric of a more specific type of condition; this is because, in medical terminology, the most common form of a condition is often known by the name of the condition itself and only the less common types are qualified. WHO gives for this situation the example of "mitral stenosis", which is commonly used to mean "rheumatic mitral stenosis". These inbuilt assumptions have to be taken into account to avoid incorrect classification.

When comparing trends over time and interpreting statistics based on ICD, it should be considered that assumptions may change from one revision of ICD to another.
Guidelines for recording diagnostic information for single-condition analysis of morbidity data

The main considerations mentioned in the Guidelines when recording information for each episode of healthcare are:

- **Specificity and detail.** Diagnostic statements selected should be as informative as possible, i.e. classifying the condition to the most specific ICD category.
- **Uncertain diagnoses or symptoms.** When no definite diagnosis has been established by the end of an episode of healthcare, it should be recorded as the information that permits the greatest degree of specificity and knowledge about the condition that prompted the care or investigation. This should be done by stating a symptom, abnormal finding, or problem, instead of qualifying a diagnosis as 'possible', 'questionable', or 'suspected', in case it has been considered but not established.
- **Contact with health services for reasons other than illness.** Those are situations in which a person, who may not be ill, requires or receives limited care or services; in such cases, the details of the relevant circumstances should be recorded as the 'main condition'. Examples: immunization; contraceptive management; antenatal and post-partum care; surveillance of persons at risks because of personal or family history; examinations of healthy persons; etc.
- **Multiple conditions.** If the episode of healthcare concerns a number of related conditions (e.g. multiple injuries) the one that is more severe and demanding of resources should be recorded as the 'main condition'. Examples: immunization; contraceptive management; antenatal and post-partum care; surveillance of persons at risks because of personal or family history; examinations of healthy persons; etc.
- **Conditions due to external causes.** When an injury, poisoning, or other effect of external causes is recorded, it is important to fully describe the nature condition and the circumstances that caused it. Examples: 'cerebral contusion caused when patient lost control of car, which hit a tree'.
- **Treatment of sequelae.** When the episode of care involves the treatment or investigation of a residual condition (sequelae) of a disease that is no longer present, the sequelae should be fully described and its origin stated, along with a clear indication that the original disease is no longer present. Example: 'infertility due to tubal occlusion from old tuberculosis'.

* 'other conditions' in relation to an episode of healthcare should be recorded in addition to the 'main condition' - even when dealing with single-cause analysis - since this information may assist in choosing the correct ICD code for the main condition.

Optional dual coding

There are a number of situations in which two ICD codes are permitted to be used to fully describe a patient's condition:
| Coding of conditions of the type 'dagger and asterisk' system | When applicable, both dagger and asterisk codes should be used for the main condition, since they denote two different pathways for a single condition. This system allows the inclusion of diagnostic statements that contain information about both the underlying generalized disease and the manifestation in a particular organ or site, which is a clinical problem in its own right. As explained above, the underlying disease is marked with a dagger (†) and the optional additional code for the manifestation is marked with an asterisk (*). The dagger code is the primary code and must always be used; for coding, the asterisk code must never be used alone. Example: 'Main condition': Measles pneumonia it will be coded to Measles complicated by pneumonia (B05.2†) and Pneumonia in viral diseases classified elsewhere (J17.1*) |
| Coding of external causes of morbidity | For injuries and other conditions due to external causes, both the nature of the condition and the circumstances of the external cause should be coded. The preferred 'main condition' code should be that describing the nature of the condition. The code from Chapter XX indicating the external cause would be used as an optional additional code. Example: 'Main condition': Severe hypothermia - patient fell in her garden in cold weather 'Other conditions': Senility it will be coded to: Hypothermia (T68) as 'main condition'; the external cause code for Exposure to excessive natural cold at home (X31, pace of occurrence 0) may be used as an optional additional code. |
| Local infections | For local infections, classifiable to the 'body systems' Chapter, codes from Chapter I Certain infectious and parasitic diseases may be added to identify the organism, where this information is not included in the title of the rubric. |
| Morphology of neoplasms | The morphology code from ICD-O, although not part of ICD, may be added to the Chapter II code to identify the morphological type of the tumor. |
| Mental and behavioural disorders (F00-F09) | For conditions in Chapter V classifiable under F00-F09 Organic, including symptomatic, mental disorders, where a code from another Chapter may be added to indicate the cause, i.e. the underlying disease, injury, or other insult to the brain. |
| Coding of sequelae of certain conditions | ICD provides a number of categories entitled 'Sequelae of ...'; e.g. B90-B94 Sequelae of infectious and parasitic diseases, which may be used to indicate conditions no longer present as the cause of a current problem undergoing treatment or investigation. In these situations, the preferred code for the 'main condition' is, however, the code for the nature of the sequelae itself, to which the code for 'Sequelae of ...' may be added as an optional additional code. Example: 'Main condition': Dysphasia from old cerebral infarction it will be coded to: Dysphasia (R47.0) as the 'main condition' and the code for Sequelae if cerebral infarction (I69.3) may be used as an optional additional code. |

Supplementary Subdivisions

Supplementary subdivisions in ICD-10 (fifth and subsequent characters)

The fifth and subsequent character codes in ICD-10 are usually sub-classifications along a different axis from the fourth character; they can be found in:

- Chapter XIII Diseases of the musculoskeletal system and connective tissue subdivisions by anatomical site
Chapter XIII contains codes M00 to M99.

It is used to code diseases of the musculoskeletal system and connective tissue that are not the result of injury (conditions that are the result of an injury are coded to Chapter XIX, see below).

The distinctive feature of this Chapter is the use of the optional fifth character to provide a sub-classification:

- Some categories and blocks in the Chapter have their own site sub-classification instead of the Chapter level site codes; those are: M23, M40-54 (except M50 and M51) and M99.
- Some Chapter XIII codes are site-specific and therefore not requiring a site sub-classification.
- Example: for the category M10 the note reminds the coder to check the list for the optional site code at the beginning of the Chapter.

<table>
<thead>
<tr>
<th>M10</th>
<th>Gout</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[See site code at the beginning of this chapter]</td>
</tr>
<tr>
<td>M10.0</td>
<td>Idiopathic gout</td>
</tr>
<tr>
<td></td>
<td>Gouty bursitis</td>
</tr>
<tr>
<td></td>
<td>Primary gout</td>
</tr>
<tr>
<td></td>
<td>Urate tophi of heart² (143.8)</td>
</tr>
<tr>
<td>M10.1</td>
<td>Lead-induced gout</td>
</tr>
<tr>
<td>M10.2</td>
<td>Drug-induced gout</td>
</tr>
<tr>
<td></td>
<td>Use additional external cause code (Chapter XX), if desired, to identify drug.</td>
</tr>
<tr>
<td>M10.3</td>
<td>Gout due to impairment of renal function</td>
</tr>
<tr>
<td></td>
<td>Use additional code, if desired, to identify impairment of kidney disease (N17-N19)</td>
</tr>
<tr>
<td>M10.4</td>
<td>Other secondary gout</td>
</tr>
<tr>
<td>M10.9</td>
<td>Gout, unspecified</td>
</tr>
</tbody>
</table>

- Example: M10.07 is the code for idiopathic gouty arthritis of the big toe.
- Example of the supplementary sub-classification for the site of involvement in the case of category M54.
M54  Dorsalgia
   [See site code before M50]
   Excl.: psychoergic dorsalgia (M5.4)

M54.0  Panniculitis affecting regions of neck and back
   Excl.: panniculitis:
      - NOS (M79.3)
      - lupus (L03.2)
      - relapsing [Weber-Christian] (M45.6)

M54.1  Radiculopathy
   Neuritis or radiculitis:
      - brachial NOS
      - lumbar NOS
      - lumbosacral NOS
      - thoracic NOS
   Radiculitis NOS
   Excl.: neuralgia and neuritis NOS (M79.2)
   radiculopathy with:
      - cervical disc disorder (M50.4)
      - lumbar and other intervertebral disc disorder (M51.1)
      - spondylosis (M47.2)

The following supplementary subclassification to indicate the site of involvement is provided for optional use with appropriate categories in the block on dorsalgias, except categories M50 and M51; see also note at the beginning of this chapter.

0  Multiple sites in spine
1  Occipito-atlanto-axial region
2  Cervical region
3  Cervicalthoracic region
4  Thoracic region
5  Thoracolumbar region
6  Lumbar region
7  Lumbosacral region
8  Sacral and sacrococcygeal region
9  Site unspecified
• Chapter XIX Injury, poisoning and certain other consequences of external causes

subdivisions to indicate open and closed fractures, as well as intracranial, intra-thoracic, and intra-abdominal injuries with and without open wound

This Chapter is used to capture information about the nature of injuries, poisonings, and other mishaps. Chapter XX is the companion to this Chapter as it is used to collect information about the causes of the injuries and poisonings.

Fractures can be coded with a supplementary fifth character (0 or 1) to indicate whether the fracture is closed or open. This is a supplementary character for fractures that is optional: it may be added to the fracture code as a fifth character or stored as a separate data item, depending on the data collection system used. An alternative way to code an open fracture is to use two codes, one for the nature and location of the fracture and one for the ‘open’ aspect.

Example: S42.31 is the code for an open fracture of the humerus.

<table>
<thead>
<tr>
<th>S42</th>
<th>Fracture of shoulder and upper arm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following subdivisions are provided for optional use in a supplementary character position where it is not possible or not desired to use multiple coding to identify fracture and open wound; a fracture not indicated as closed or open should be classified as closed.</td>
</tr>
<tr>
<td></td>
<td>0 closed</td>
</tr>
<tr>
<td></td>
<td>1 open</td>
</tr>
<tr>
<td>S42.0</td>
<td>Fracture of clavicle</td>
</tr>
<tr>
<td></td>
<td>Clavicle:</td>
</tr>
<tr>
<td></td>
<td>• acromial end</td>
</tr>
<tr>
<td></td>
<td>• shaft</td>
</tr>
<tr>
<td></td>
<td>Collar bone</td>
</tr>
<tr>
<td>S42.1</td>
<td>Fracture of scapula</td>
</tr>
<tr>
<td></td>
<td>Acromial process</td>
</tr>
<tr>
<td></td>
<td>Acromion (process)</td>
</tr>
<tr>
<td></td>
<td>Scapula (body)/glenoid cavity/(neck)</td>
</tr>
<tr>
<td></td>
<td>Shoulder blade</td>
</tr>
<tr>
<td>S42.2</td>
<td>Fracture of upper end of humerus</td>
</tr>
<tr>
<td></td>
<td>Anatomical neck</td>
</tr>
<tr>
<td></td>
<td>Great tuberosity</td>
</tr>
<tr>
<td></td>
<td>Proximal end</td>
</tr>
<tr>
<td></td>
<td>Surgical neck</td>
</tr>
<tr>
<td></td>
<td>Upper epiphysis</td>
</tr>
<tr>
<td>S42.3</td>
<td>Fracture of shaft of humerus</td>
</tr>
<tr>
<td></td>
<td>Humerus NOS</td>
</tr>
<tr>
<td></td>
<td>Upper arm NOS</td>
</tr>
</tbody>
</table>

The following subdivisions are provided for optional use in a supplementary character position where it is not possible or not desired to use multiple coding to identify fracture and open wound; a fracture not indicated as closed or open should be classified as closed.

|     | 0 closed |
|     | 1 open |

the other possibility is to use two codes: S42.3 Fracture of the shaft of humerus plus S41.1 Open wound of upper arm.

• Chapter XX

former subdivisions to indicate the type of activity being undertaken at the time of the event have become now optional additional information that is recorded in a separate field