ICD-11

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World Health Organization
WHO Family of Classifications
is the **international standard** for recording, reporting and measuring health & health services

- Mortality Statistics
- Morbidity Statistics
- Quality and Safety
- Primary care
- Health Care Costs
- Progress towards SDGs
- Clinical documentation
Why ICD-11?

- Improved usability
  - Less training
  - All clinical detail – code combinations
- Update scientific content
- Enable coding of all clinical detail
- Make eHealth ready for use in electronic environments
- Linkage to relevant other classifications and terminologies
- Full multilingual support on translation and output
Timeline

- 2018 Release of version for implementation
- 2019 January WHO Executive Board
- 2019 May World Health Assembly
ICD-11 Scientific clinical input

- Extensive participation by national and international scientific societies

- Over 300 clinical specialists organized in 30 topic advisory groups, 270 Institutions, 55 countries

- Input from clinical modifications of old ICD-10 – and they were based on clinical needs

- Reviews, testing, commenting => 99 countries
ICD – Maintenance and governance - transparent

Input (proposal platform) → Verification (use case, scientific) → Verification (statistical)

- Classification and Statistics Advisory Committee (CSAC)
- Medical Scientific Advisory Committee
- Mortality Reference Group
- Morbidity Reference Group
- Functioning and disability reference group
- Traditional medicine reference group

Proposal → Completeness → ICD
ICD-11 Transparent

- Proposal platform allowing discussion and decision tracking, and notification
- You can suggest new changes and adding new terms
- Development browser (orange) allows to see and track daily changes
ICD-11 IT friendly –

- **Web services** – full functionality available in the software of choice - *you keep your preferred software user interface*

- Online services – everybody can use ICD without any local software

- Offline services – all the functionality on a local computer and updates when internet is available

- Output files – formats include CSV, ClaML and others as necessary

- Print version – Real paper version gives look and feel of the past
ICD-11 IT friendly –

- Web services
- Online services
- Offline services
- Output files
- Print version

ICD-11 repository
- Daily versions
- Releases
- Snapshots

ICD Search Index
- Multiple versions
- Multiple languages

ICD-11 Database
- Proposals
- Translations

ICD-API
- RESTFUL Web services

ICD-11 Browser

ICD-11 Coding Tool

Proposal Mechanism

Translation Tool

Print versions
ICD API allows programmatic access to the International Classification of Diseases (ICD). You may use this site to access up to date documentation on using the API as well as managing the keys needed for using the API.

Register for using the API

Register to get access to the APIs (if you haven’t registered already)

View API access key(s) (requires logging in)

How to Use the APIs

ICD REST API Documentation
ICD API Authentication

https://icd.who.int/icdapi
ICD-11 is built on an ontological complex structure. This technology provides the user guidance, but the normal user does not have to deal with this (like normal drivers do not touch the engine of their cars. They just drive).

In the browser, ‘multiple parenting’ is shown as “code elsewhere”

Detail that is grouped in categories with the name ‘other specified’, can be coded using URI.
URI – uniform resource identifier

Entity has a code grouped into a category; has URI for recording, if desired

**Shoreline**

<table>
<thead>
<tr>
<th>Code</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C5C.11</td>
<td><a href="http://id.who.int/icd/entity/1959883044">http://id.who.int/icd/entity/1959883044</a></td>
</tr>
<tr>
<td>1C5D.13</td>
<td><a href="http://id.who.int/icd/entity/685093552">http://id.who.int/icd/entity/685093552</a></td>
</tr>
<tr>
<td>1C5.1Y</td>
<td><a href="http://id.who.int/icd/entity/1302232870">http://id.who.int/icd/entity/1302232870</a></td>
</tr>
</tbody>
</table>

URI – electronic reporting in electronic health records with more detail than with categories.
ICD-11 Foundation

- Index
- ICD 11 for Mortality and Morbidity Statistics
- Specialty versions
- Content model
- Extension codes

ICD-O Cancer

Substances INN (=> ATC)

ICHII dimensions (International Classification of Health Interventions)

ICF (Functioning)

Terminologie, eg SNOMED Orphanet ICPC

External causes of injury ICECI
ICD-11 User friendly

- Easier coding – coding tool, more instructions built in
- Guidance for sing code combinations
- Specialty versions focus on needs for particular specialties
Browser and Coding tool

https://icd.who.int

ICD-11
International Classification of Diseases 11th Revision
The global standard for diagnostic health information

Use ICD-11
ICD-11 Browser
for seeing the content
ICD-11 Coding Tool
for coding with ICD-11
ICD-API
web services to get programmatic access to ICD-11

Learn More
ICD Home Page
ICD-11 Reference Guide
About ICD-11
ICD Video

Be Involved
Our maintenance platform provides various ways to contribute
Comments
Proposals
Translations
The ICD-11 browser

- Current orange browser is the maintenance tool for ICD-11
- Not only a search tool, but also the mechanism to add proposals and comments after registering
- Registered users are able to:
  - Comment on the content
  - Submit proposals for change
  - Read comments and proposals from others
  - Access PDF or Word versions of the classification
ICD-11 Coding tool

- This tool works by searching all ICD-11 terms and is the ICD-11 index
- Has links to the browser so the user can confirm location is correct for term being searched
- Generates and dynamically updates two different outputs
  - Word list
  - Matched entities
- Synonyms, word completion... - like online search engines
Simple search

Type a diagnostic statement into the Coding Tool

e.g. *cancer of stomach*
Simple search

Type a diagnostic statement into the Coding Tool
e.g. **Osteoarthritis of right knee**
Flexible search

Type a diagnostic statement into the Coding Tool

e.g. *splenic flexure colonic liposarcoma*
Flexible search cont.

Try flexible search

The Coding Tool now finds an almost exact match.
Flexible search cont.

- Browser view with postcoordination option for histopathology
ICD-11

- 26 chapters,
  - Special tabulation lists
    (for analysis only, e.g. infections by agent)
- Functioning pattern
- Traditional medicine
- Extension codes
- Multiple languages – controlled translation platform
Differences to ICD-10- Coding scheme

- The chapter numbering:
  - Arabic numbers (not roman numerals)

- The coding scheme for categories:
  - Minimum 4 characters
  - 2 levels of subcategories

- Coding scheme
  - always letter in second position (distinction codes of ICD-10)
  - No l,l (L,l); 0,O (Zero, o)

- First character relates to the chapter number (1-Z)
No change to ICD-10

- Conditions included in following chapters have not been subjected to moves:
  - Maternal
  - Perinatal
  - Injury
  - Tumour

- Mortality coding rules have kept their intent
Extension codes – add all the detail you need

Type 1

- Severity
- Temporality (course of the condition)
- Temporality (Time in life)
- Aetiology
- Anatomic detail Topology Anatomic location
- Histopathology
- Biological Indicators
- Consciousness
- External Causes detail
- Injury Specific detail

Type 2

- Main Condition
  - Reason for encounter
  - Reason for admission
  - Main Resource Condition
- Present on Admission
  - Developed after admission
  - Uncertain timing relative to admission
- Provisional diagnosis
- Diagnosis confirmed by...
  - Lab
  - Serology
  - Histology
  - Genetics
  - Imaging
  - Unspecified means
- Differential Diagnosis
Examples of problems solved with ICD-11

- Antimicrobial resistance - essentially **missing in ICD-10**
- HIV subdivisions - **outdated** detail in ICD-10
- Skin cancer - melanoma types missing – basalioma **missing in ICD-10**
- Valve diseases - **outdated** structure, need by valve, less rheumatic
- Postprocedural conditions - **clarify** when use 19 and when not for postprocedural
- Diabetes coding clinically more relevant and flexible
- External causes - **Loosing detail** in non-accidents; traffic accidents
Differences to ICD-10

- ICD-11 has five new chapters and 2 additional sections:
  
  Chapter 3  Diseases of the Blood or Blood-forming Organs
  Chapter 4  Disorders of the Immune System
  Chapter 7  Sleep-Wake Disorders
  Chapter 17 Conditions related to Sexual Health
  Chapter 26 Traditional Medicine
  Section on functioning (activity and participation – WHODAS2/MDS)
  Chapter X  Extension codes

- OR means ‘and’ or ‘or’ – replacing formerly used ‘and’
Chapters - changes

- 06 – Mental, behavioural or neurodevelopmental disorders
  - New structures
- 08 – Diseases of the nervous system
  - More clinical restructuring,
  - Received prion disease
  - Received cerebrovascular diseases
- 09 – Diseases of the visual system
  - More clinical detail
Chapter 01 – Certain infectious diseases

- Minimise the impact on longitudinal statistics of major infections;

- Allow reporting of main infection syndromes without mention of a specific agent or when public health concern
  - Influenza, moved into Chapter 1
  - Prion diseases moved into Nervous system.
  - Antimicrobial resistance is found in Ch. 21 but is to be reported in combination with the infectious disease.
Chapter 02 – Neoplasms

- Morphology has been precoordinated
- The concepts of unknown and uncertain behavior have been split into two unique categories
Chapter 02 – Neoplasms

- Generally, the hierarchy:
  - Behaviour;
    - Broad sites or systems;
      - the specific site or morphological (histology) type

- Three exceptions to this hierarchy:
  1. Neoplasms of brain and central nervous system 1\textsuperscript{st} level is broad sites
  2. Neoplasms of haematopoietic and lymphoid tissues where 1\textsuperscript{st} level is broad morphological (histology) type
  3. Malignant mesenchymal neoplasms where 1\textsuperscript{st} level is specific morphological (histology) type
This new chapter (previously part of Chapter III in ICD-10) has the following sections:

- Immunodeficiencies
- Non-organ specific systemic disorders (NOSSAD)
- Autoinflammatory disorders
- Allergic or hypersensitivity conditions (+anaphylaxis)
- Certain diseases involving the immune system
- Diseases of thymus
Diseases of the circulatory system

- Heart valve disease no longer dominated by rheumatic fever (now: valve-vitium-etiology)

- New distinct higher level categories
  - Diseases of the myocardium, including extensive subsections on Myocarditis and Cardiomyopathy.
  - Cardiac arrhythmia, including a large new subsection on ‘Cardiac arrhythmia associated with genetic disorder’ and ‘Pacemaker or implantable cardioverter or defibrillator or lead dysfunction’
  - New subsection on Pulmonary Hypertension in the Pulmonary heart disease and diseases of pulmonary circulation section
Chapter 12 – Diseases of the respiratory system

- Specific Infectious lung diseases have been moved to Chapter 01 to better reflect the infectious nature of these conditions.

- Developmental respiratory diseases are now located in Chapter 20 Developmental anomalies.

- Cystic fibrosis has been moved to Certain lower respiratory tract diseases and multi-parented to metabolic disorders in the Endocrine chapter.
Chapter 13 – Diseases of the digestive system

- More detailed anatomical groups - rostral-caudal order
- More recent clinical detail
- Important digestive diseases have been allocated their own category (e.g. gastro-oesophageal reflux disease)
Chapter 14 – Diseases of the skin

- The general hierarchy of Chapter 14 consists of the following:
  - 1st level Broad category of disease/disorder type
  - 2nd level - Specific disease/disorder type with some anatomical site
  - 3rd level - Further specificity of disease/disorder type

- Major changes have been made to this chapter adding detail coming from the fusion of the American, British and German dermatological terminologies
Chapter 16 – Diseases of the genitourinary system

To reflect the current scientific understanding for certain genitourinary conditions, additional detail has been included for the following areas:

- Amenorrhea
- Ovarian dysfunction
- Female pelvic pain
- Endometriosis
- Adenomyosis
- Female infertility
- Male infertility
- Early pregnancy loss
- Pregnancy outcomes
- The Kidney failure section of the classification has been revised (KDIGO)
Chapter 17 – Conditions related to sexual health

- New chapter in ICD-11 divided into major sections for:
  - Sexual dysfunctions
  - Sexual pain disorders
  - Gender incongruence

- The general hierarchy consists of:
  - 1st level broad category of condition
  - 2nd level - specific type of condition
  - 3rd level - specific disease/disorder
Chapter 18 – Pregnancy, childbirth or the puerperium

- Additional specifications have been included for “Early pregnancy loss”.

- A new section Obstetric haemorrhage has been added to enable all types of haemorrhage to be grouped together.
Chapter 20 – Developmental anomalies

Chapter 20 has undergone a major restructure with it now having four major sections

- Structural developmental anomalies primarily affecting one body system
- Multiple developmental anomalies or syndromes
- Chromosomal anomalies, excluding gene mutations
- Conditions with disorders of intellectual development as a relevant clinical feature
Chapter 23 – External causes of morbidity or mortality

- Removed detail (not usually reported)
  - Can be added with code combination with extension codes

- Other sections include Exposure to extreme forces, Maltreatment, Legal intervention, Armed conflict and

- Causes of healthcare related harm
  - Completely overhauled for modern reporting of harm or near failure
Patient safety

“Cause” of harm
- Substances
- Procedures
- Devices
- Other Aspects of Care

“Mode or Mechanism” of harm
- e.g. overdose/underdose for substances
- e.g. accidental perforation for procedures
- e.g. dislodgement/malfunction for devices
- e.g. mismatched blood used in transfusion for other aspects of care

A cluster of codes to denote the "Injury or Harm" that resulted from the event
A patient presents with an intracranial hemorrhage arising while on warfarin anticoagulation. INR found to be 7.0 and careful history reveals patient to have accidentally taken double doses over several days.

Clustered Coding:
A clinical example

- A patient presents with an intracranial hemorrhage arising while on warfarin anticoagulation. INR found to be 7.0 and careful history reveals patient to have accidentally taken double doses over several days.

- Clustered Coding:
  - PH80 & XE9AC Code for the cause of harm (exposure to drug in therapeutic intent & warfarin)
  - PH92.0 Code for mode/mechanism (overdose)
  - 8B00.Z Code for actual harm (intracranial hemorrhage)
Why ICD-11?

- Improved usability
  - Less training
  - Easily add all clinical detail
  - Add terms

- Updated scientific content

- Improved incorporation in electronic environments

- Linkage to relevant other classifications and terminologies

- Improve comparability of translations

- Implementation package
ICD 11
Start now