

Challenges, Opportunities, and Approaches in a Health KOS Vocabulary's Revisions

Insights from ICD-11



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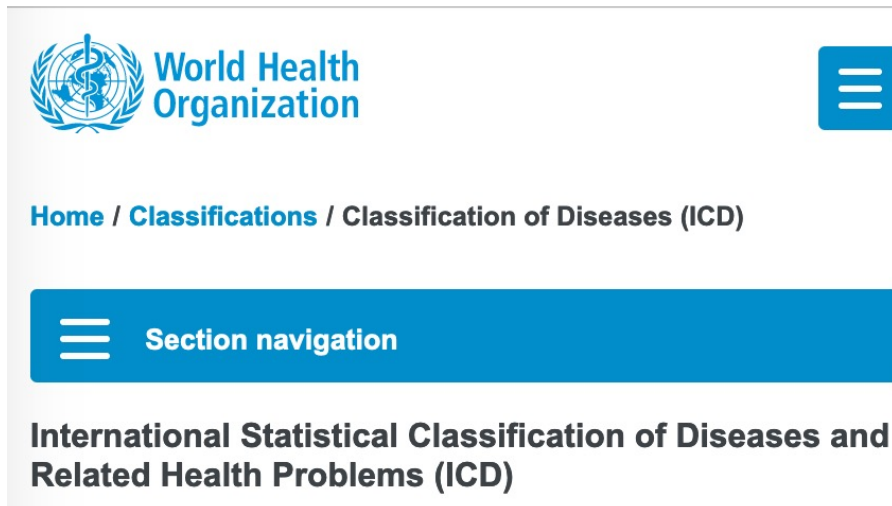
Dept. of Professional Services
MedeAnalytics, Inc., Texas, USA.

Ref: Hong, Yi. & M. Zeng. 2022. "International Classification of Diseases (ICD)".
ISKO Encyclopedia of Knowledge Organization (IEKO) <https://www.isko.org/cyclo/icd>

2022 NKOS workshop, Oct.6-7 @ DCMI 2022.

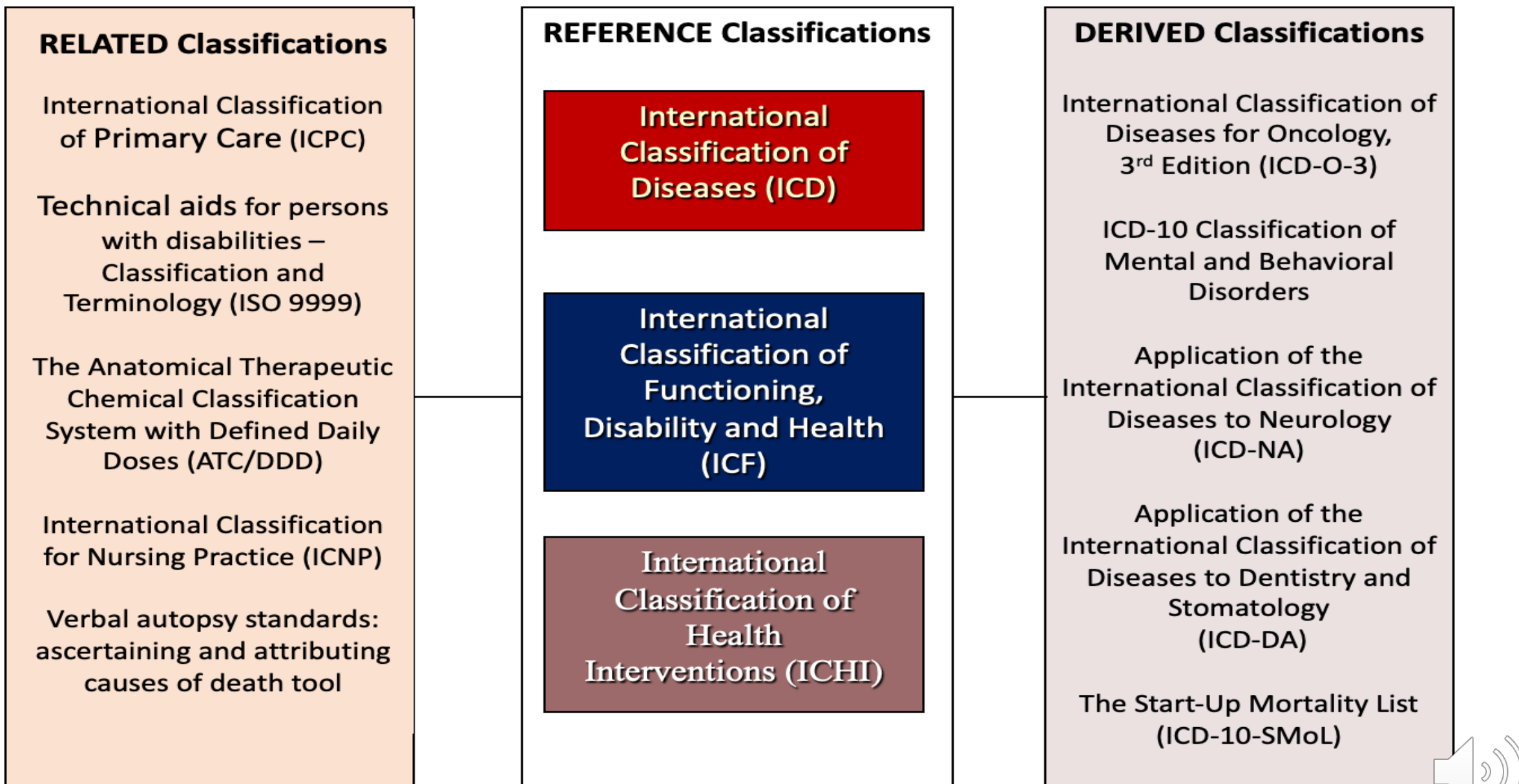


1. Introduction



The screenshot shows the WHO website header with the logo and a menu icon. The breadcrumb trail reads: Home / Classifications / Classification of Diseases (ICD). Below this is a blue bar with a menu icon and the text "Section navigation". The main heading is "International Statistical Classification of Diseases and Related Health Problems (ICD)".

ICD in the WHO Family of International Classifications (WHO FIC)



Source: Generated based on the info on WHO FIC webpage <https://www.who.int/standards/classifications>

ICD has been used World-wide

ICD-10 (Endorsed 1990,
came into effect 1993-)



has promoted collaboration in

- collection
 - production
 - classification
 - analysis
- of global health data

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allows for

- easy storage and retrieval of health information
- sharing of health information among hospitals, regions, and countries.

- Is available in 43 languages and used in over 100 countries
- Has more than two dozen modifications
- Several national clinical modifications of ICD-10 have been developed, with permission from the WHO.

ICD-10 Version:2019

Search



▼ ICD-10 Version:2019



- ▶ **I** Certain infectious and parasitic diseases
- ▶ **II** Neoplasms
- ▶ **III** Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
- ▶ **IV** Endocrine, nutritional and metabolic diseases
- ▶ **V** Mental and behavioural disorders
- ▶ **VI** Diseases of the nervous system
- ▶ **VII** Diseases of the eye and adnexa
- ▶ **VIII** Diseases of the ear and mastoid process
- ▶ **IX** Diseases of the circulatory system
- ▶ **X** Diseases of the respiratory system
- ▶ **XI** Diseases of the digestive system
- ▶ **XII** Diseases of the skin and subcutaneous tissue
- ▶ **XIII** Diseases of the musculoskeletal system and connective tissue
- ▶ **XIV** Diseases of the genitourinary system
- ▶ **XV** Pregnancy, childbirth and the puerperium
- ▶ **XVI** Certain conditions originating in the perinatal period
- ▶ **XVII** Congenital malformations, deformations and chromosomal abnormalities
- ▶ **XVIII** Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
- ▶ **XIX** Injury, poisoning and certain other consequences of external causes
- ▶ **XX** External causes of morbidity and mortality
- ▶ **XXI** Factors influencing health status and contact with health services
- ▶ **XXII** Codes for special purposes

<https://icd.who.int/browse10/>



(cont.) ICD has been used World-wide

ICD-11 (Endorsed 2019, came into effect 2022.)

- Available in [Arabic](#), [Chinese](#), [English](#), [French](#) & [Spanish](#).
- Russian and 20 more languages are underway.
- <https://www.who.int/publications/m/item/icd-11-fact-sheet>

ICD-11 for Mortality and Morbidity Statistics (Version : 05/2021)

ICD-11 - ICD-11 for Mortality and Morbidity Statistics

- ▶ 01 Certain infectious or parasitic diseases
- ▶ 02 Neoplasms
- ▶ 03 Diseases of the blood or blood-forming organs and certain disorders involving the immune mechanism
- ▶ 04 Diseases of the immune system
- ▶ 05 Endocrine, nutritional or metabolic diseases
- ▶ 06 Mental, behavioural or neurodevelopmental disorders
- ▶ 07 Sleep-wake disorders
- ▶ 08 Diseases of the nervous system
- ▶ 09 Diseases of the visual system
- ▶ 10 Diseases of the ear or mastoid process
- ▶ 11 Diseases of the circulatory system
- ▶ 12 Diseases of the respiratory system
- ▶ 13 Diseases of the digestive system
- ▶ 14 Diseases of the skin
- ▶ 15 Diseases of the musculoskeletal system and connective tissue
- ▶ 16 Diseases of the genitourinary system
- ▶ 17 Conditions related to sexual health
- ▶ 18 Pregnancy, childbirth or the puerperium
- ▶ 19 Certain conditions originating in the perinatal period
- ▶ 20 Developmental anomalies
- ▶ 21 Symptoms, signs or clinical findings, not classified elsewhere
- ▶ 22 Injury, poisoning or certain other consequences of external causes
- ▶ 23 External causes of morbidity or mortality
- ▶ 24 Factors influencing health status or contact with health services
- ▶ 25 Codes for special purposes
- ▶ 26 Supplementary Chapter Traditional Medicine - Module I
- ▶ V Supplementary section for functioning as assessed by WHO
- ▶ X Extension Codes

CIE-11 para estadísticas de mortalidad y morbilidad

CIE-11 para estadísticas de morbilidad

- ▶ 01 Algunas enfermedades infecciosas o parasitarias
- ▶ 02 Neoplasias
- ▶ 03 Enfermedades de la sangre u órganos hematopoyéticos
- ▶ 04 Enfermedades del sistema inmunitario
- ▶ 05 Enfermedades endocrinas, nutricionales o metabólicas
- ▶ 06 Trastornos mentales, del comportamiento o del neurodesarrollo
- ▶ 07 Trastornos del sueño y los ritmos circadianos
- ▶ 08 Enfermedades del sistema nervioso
- ▶ 09 Enfermedades del sistema visual
- ▶ 10 Enfermedades del oído o del proceso mastoideo
- ▶ 11 Enfermedades del sistema circulatorio
- ▶ 12 Enfermedades del sistema respiratorio
- ▶ 13 Enfermedades del sistema digestivo
- ▶ 14 Enfermedades de la piel
- ▶ 15 Enfermedades del sistema musculoesquelético y de los tejidos conectivos
- ▶ 16 Enfermedades del sistema genitourinario
- ▶ 17 Condiciones relacionadas con la salud sexual
- ▶ 18 Embarazo, parto o puerperio
- ▶ 19 Algunas afecciones que se originan en el período perinatal
- ▶ 20 Anomalías del desarrollo
- ▶ 21 Síntomas, signos o hallazgos clínicos no clasificados en otra parte
- ▶ 22 Traumatismos, intoxicaciones o consecuencias de causas externas

CIM-11 pour les statistiques de mortalité et de morbidité

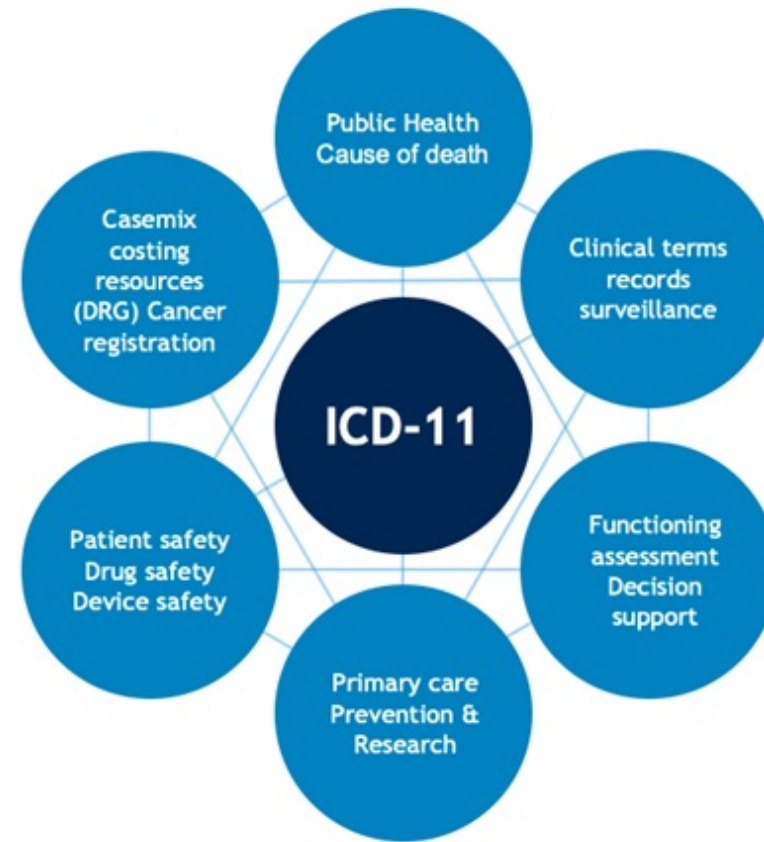
CIM-11 pour les statistiques de mortalité et de morbidité

- ▶ 01 Certaines maladies infectieuses ou parasitaires
- ▶ 02 Tumeurs
- ▶ 03 Maladies du sang ou des organes hématopoïétiques
- ▶ 04 Maladies du système immunitaire
- ▶ 05 Maladies endocriniennes, nutritionnelles ou métaboliques
- ▶ 06 Troubles mentaux, comportementaux ou neurodéveloppementaux
- ▶ 07 Troubles du cycle veille-sommeil
- ▶ 08 Maladies du système nerveux
- ▶ 09 Maladies de l'appareil visuel
- ▶ 10 Maladies de l'oreille ou de l'apophyse mastoïdienne
- ▶ 11 Maladies de l'appareil circulatoire
- ▶ 12 Maladies de l'appareil respiratoire
- ▶ 13 Maladies de l'appareil digestif
- ▶ 14 Maladies de la peau
- ▶ 15 Maladies du système musculosquelettique et des tissus conjonctifs
- ▶ 16 Maladies de l'appareil génito-urinaire
- ▶ 17 Affections liées à la santé sexuelle
- ▶ 18 Grossesse, accouchement ou puerpéralité
- ▶ 19 Certaines affections dont l'origine est le période périnatale
- ▶ 20 Anomalies du développement
- ▶ 21 Symptômes, signes ou résultats d'examens non classés ailleurs
- ▶ 22 Lésions traumatiques, empoisonnement ou conséquences de causes externes
- ▶ 23 Causes externes de morbidité ou de mortalité

用于死因统计

用于死因统计

- ▶ 01 某些传染病或寄生虫病
- ▶ 02 肿瘤
- ▶ 03 血液或造血器官疾病及某些涉及免疫机制的紊乱
- ▶ 04 免疫系统疾病
- ▶ 05 内分泌、营养或代谢疾病
- ▶ 06 精神、行为或神经发育障碍
- ▶ 07 睡眠-觉醒障碍
- ▶ 08 神经系统疾病
- ▶ 09 视觉系统疾病
- ▶ 10 耳或耳后骨突疾病
- ▶ 11 循环系统疾病
- ▶ 12 呼吸系统疾病
- ▶ 13 消化系统疾病
- ▶ 14 皮肤病
- ▶ 15 肌肉骨骼系统或结缔组织疾病
- ▶ 16 泌尿生殖系统疾病
- ▶ 17 性健康相关情况
- ▶ 18 妊娠、分娩或产褥期
- ▶ 19 起源于围生期的某些情况
- ▶ 20 发育异常
- ▶ 21 症状、体征或临床所见，不可归类在他处者
- ▶ 22 损伤、中毒或外因的某些其他后果
- ▶ 23 疾病或死亡的外因
- ▶ 24 影响健康状态或与保健机构接触的因素
- ▶ 25 用于特殊目的的编码
- ▶ 26 补充章传统医学病证-模块1
- ▶ V 功能评定补充部分
- ▶ X 扩展码



التصنيف-11 لإحصائيات الوفيات (نسخة : 02/2022)

التصنيف-11 لإحصائيات الوفيات

- ▶ 01 بعض الأمراض المُعدية
- ▶ 02 أورام
- ▶ 03 أمراض في الدم وفي الجهاز المناعي
- ▶ 04 أمراض جهاز المناعة
- ▶ 05 أمراض الغدد الصم أو اضطرابات نفسية أو سلوكية
- ▶ 06 اضطرابات النوم-الاستيقاظ
- ▶ 07 اضطرابات الجهاز العصبي
- ▶ 08 أمراض الجهاز البصري
- ▶ 09 أمراض الأذن والذاتئة
- ▶ 10 أمراض جهاز الدوران
- ▶ 11 أمراض الجهاز التنفسي
- ▶ 12 أمراض جهاز الهضم
- ▶ 13 أمراض الجلد
- ▶ 14 أمراض الجهاز العضلي الهيكلي أو النسيج الضام
- ▶ 15 أمراض الجهاز البولي التناسلي
- ▶ 16 حالات ترتبط بالصحة الجنسية
- ▶ 17 الحمل أو الولادة أو النفاس
- ▶ 18 بعض حالات تنشأ في الفترة المحيطة بالولادة
- ▶ 19 شذوذات في النمو
- ▶ 20 أعراض أو علامات أو نتائج سريرية، لم يتم تصنيفها في مكان آخر
- ▶ 21 إصابات أو تسممات أو بعض عقابيل أخرى أسبابها خارجية
- ▶ 22 أسباب خارجية للمراضة والوفيات
- ▶ 23 عوامل تؤثر على الحالة الصحية أو على الاتصال بالخدمات الصحية
- ▶ 24 رموز خاصة
- ▶ 25 قسم تكميلي لتقييم أداء الوظائف
- ▶ X رموز امتداد

Challenges

Situation:

A widely used standard health KOS needs to respond to

- all the essentials that come along with the health situations in the world
- the evolutions in treating health issues in the quickly-advancing digital age

Challenges:

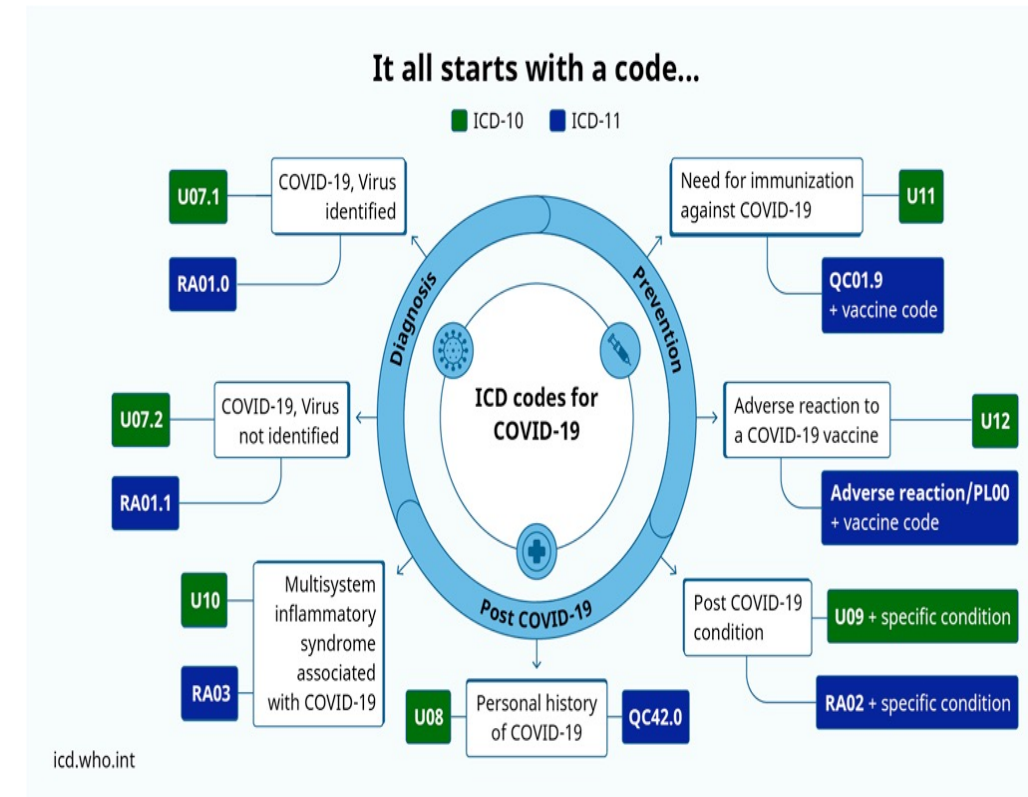
A dramatic revision may need to adjust its

- contents
- structures
- coding systems
- use guidelines

This KOS must ensure the

- semantic interoperability
- data reusability
- community's agreement

Emergency use ICD codes for COVID-19 disease outbreak



World Health Organization 2021.

<https://www.who.int/standards/classifications/classification-of-diseases/emergency-use-codes-for-covid-19-disease-outbreak>



2. ICD Revisions



2-a). Timeline view, with titles of the revisions

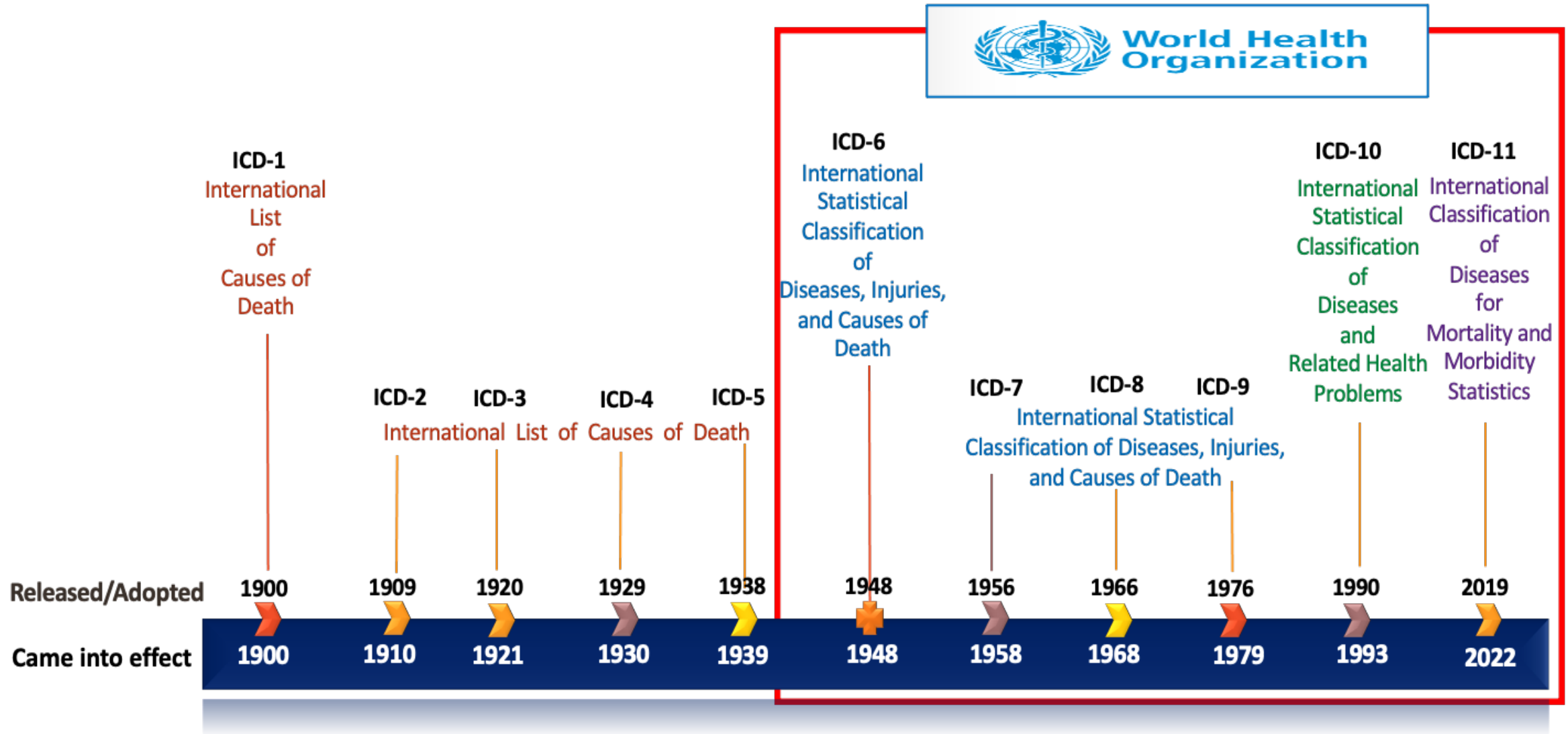
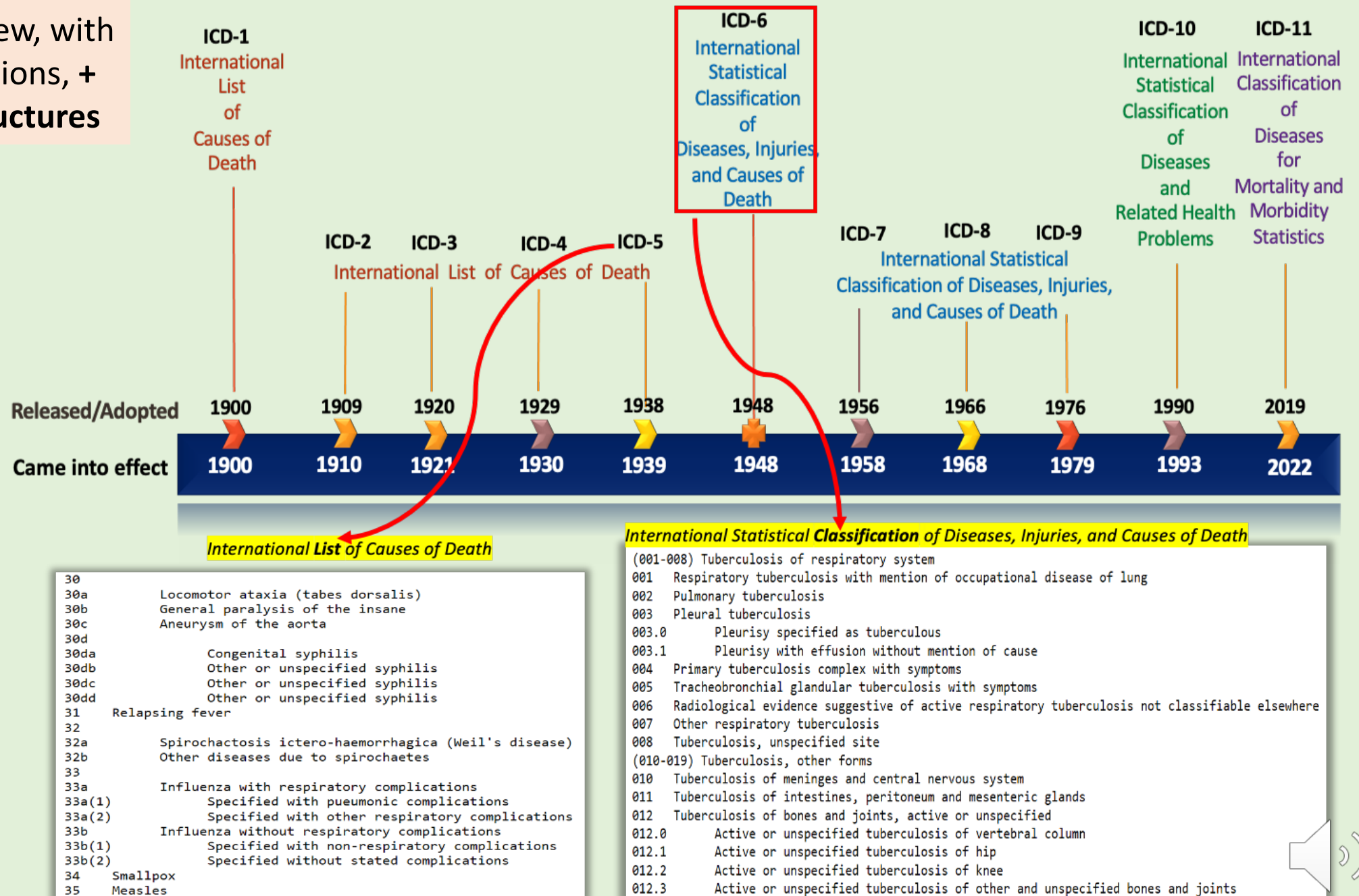


Image source: Created based on Moriyama et al. 2011. *History of the Statistical Classification of Diseases and Causes of Death* and World Health Organization. 2021-. "ICD History."



2-b). Timeline view, with titles of the revisions, + the notation structures



2-c). Chapters of ICD-10 and ICD-11

Chapters

ICD-10 Version:2019

Search

▼ ICD-10 Version:2019

▶ I Certain infectious and parasitic diseases

▶ II Neoplasms

▶ III Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism

▶ IV Endocrine, nutritional and metabolic diseases

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▶ VI Diseases of the nervous system

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▶ XIII Diseases of the musculoskeletal system and connective tissue

▶ XIV Diseases of the genitourinary system

▶ XV Pregnancy, childbirth and the puerperium

▶ XVI Certain conditions originating in the perinatal period

▶ XVII Congenital malformations, deformations and chromosomal abnormalities

▶ XVIII Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified

▶ XIX Injury, poisoning and certain other consequences of external causes

▶ XX External causes of morbidity and mortality

▶ XXI Factors influencing health status and contact with health services

▶ XXII Codes for special purposes

ICD-11 for Mortality and Morbidity Statistics (Version : 02/2022)

▼ ICD-11 for Mortality and Morbidity Statistics

▶ 01 Certain infectious or parasitic diseases

▶ 02 Neoplasms

▶ 03 Diseases of the blood or blood-forming organs

▶ 04 Diseases of the immune system

▶ 05 Endocrine, nutritional or metabolic diseases

▶ 06 Mental, behavioural or neurodevelopmental disorders

▶ 07 Sleep-wake disorders

▶ 08 Diseases of the nervous system

▶ 09 Diseases of the visual system

▶ 10 Diseases of the ear or mastoid process

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▶ 19 Certain conditions originating in the perinatal period

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▶ 25 Codes for special purposes

▶ 26 Supplementary Chapter Traditional Medicine Conditions - Module I

▶ V Supplementary section for functioning assessment

▶ X Extension Codes

Ch.03 & Ch 04: Split from a previous unified chapter III, distinguishing differences in etiology, manifestations, and care.

Ch.07 and Ch.17: Consolidate the more prominent topics since ICD-10

Ch.26: Extended to cover traditional medicine concepts

V: a "section"; aligned with *International Classification of Functioning, Disability and Health (ICF)*

X: an addendum chapter. When linked to a stem code representing a clinical state, the extension codes add significant detail and allow for multidimensional coding (including disease stage, severity, histopathology, medicaments, and anatomical details).

Image source: Compiled with added chapter notes on Figure 3, Hong and Zeng. 2022. .



2d. ICD-11 code structure

ICD-10 Version:2019

Search

ICD-10 Version:2019

I Certain infectious and parasitic diseases

II Neoplasms

III Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism

IV Endocrine, nutritional and metabolic diseases

V Mental and behavioural disorders

F00-F09 Organic, including symptomatic, mental disorders

F00 Dementia in Alzheimer disease

F00.0 Dementia in Alzheimer disease with early onset

F00.1 Dementia in Alzheimer disease with late onset

F00.2 Dementia in Alzheimer disease, atypical or mixed type

F00.9 Dementia in Alzheimer disease, unspecified

F01 Vascular dementia

F02 Dementia in other diseases classified elsewhere

F03 Unspecified dementia

VI Factors influencing health status and contact with health services

XX External causes of morbidity and mortality

XXI Factors influencing health status and contact with health services

XXII Codes for special purposes

ICD-11 for Mortality and Morbidity Statistics (Version : 05/2021)

ICD-11 - ICD-11 for Mortality and Morbidity Statistics

01 Certain infectious or parasitic diseases

02 Neoplasms

03 Diseases of the blood or blood-forming organs

04 Diseases of the immune system

05 Endocrine, nutritional or metabolic diseases

06 Mental, behavioural or neurodevelopmental disorders

Neurodevelopmental disorders

6A00 Disorders of intellectual development

6A01 Developmental speech or language disorders

6A01.0 Developmental speech sound disorder

6A01.1 Developmental speech fluency disorder

6A01.2 Developmental language disorder

6A01.20 Developmental language disorder with impairment of receptive and expressive language

6A01.21 Developmental language disorder with impairment of mainly expressive language

6A01.22 Developmental language disorder with impairment of mainly pragmatic language

6A01.23 Developmental language disorder, with other specified language impairment

6A01.Y Other specified developmental speech or language disorders

6A01.Z Developmental speech or language disorders, unspecified

6A02 Autism spectrum disorder

07 Sleep-wake disorders

08 Diseases of the digestive system

09 Diseases of the respiratory system

10 Diseases of the circulatory system

11 Diseases of the urinary system

12 Diseases of the reproductive system

13 Diseases of the musculoskeletal system

14 Diseases of the skin

15 Diseases of the eye

16 Diseases of the ear

17 Conditions of pregnancy, childbirth and the puerperium

18 Certain infectious diseases of the mother

19 Certain infectious diseases of the newborn

20 Developmental disorders

21 Symptoms, signs and clinical findings classified elsewhere

22 Injury, poisoning and external causes

23 External causes of injury, poisoning and health consequences

24 Factors influencing health status and contact with health services

25 Codes for special purposes

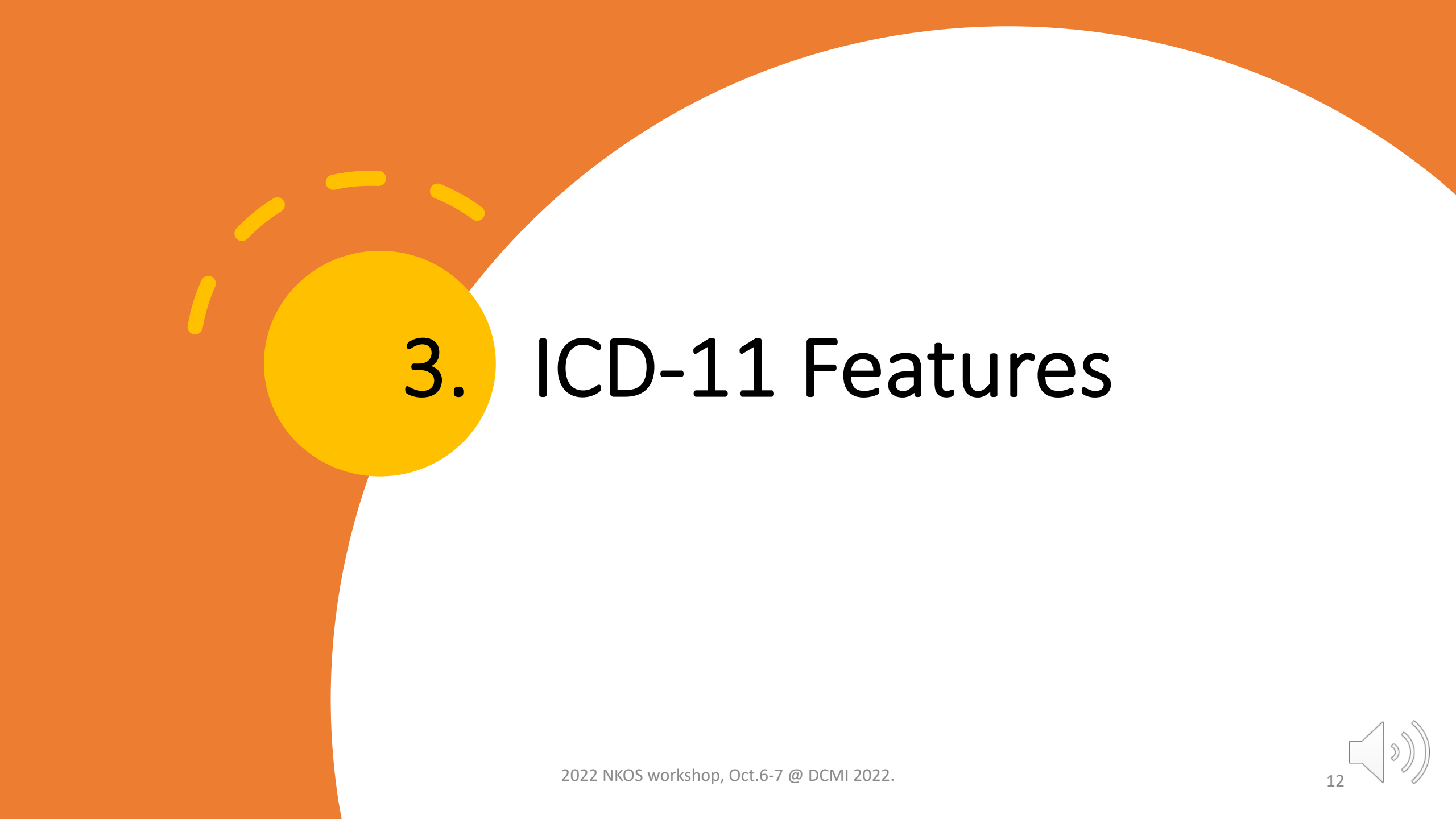
26 Supplementary Chapter Traditional Medicine Conditions - Module I

V Supplementary section for functioning assessment

X Extension Codes

For the details, read Hong & Zeng 2022. Section 4.2 Notation system / Code structure, with Figure 4.

11



3. ICD-11 Features

ICD-11 Highlights

- Legally mandated health data standard (WHO Constitution and Nomenclature Regulations).
- In effect from January 2022.
- **Conceptual framework independent of language and culture.**
- **Integration of terminology and classification.**
- **End-to-end digital solution (API, tools, online and offline).**
- **Up-to-date scientific knowledge.**
- **Comparable statistics and semantic interoperability - for 150 years.**
- ICD-11 is accessible to everybody.
- ICD-11 is distributed under Creative Commons Attribution-NoDerivs 3.0 IGO license.
- **ICD-11 enables, for the first time, the counting of traditional medicine services and encounters.**
- **The 11th revision is more extensive and has greater implications for *what* can be done with the ICD, and *how*, than any revision since the 6th, in 1948.**

Source: <https://www.who.int/standards/classifications/classification-of-diseases>

2022 NKOS workshop, Oct.6-7 @ DCMI 2022.

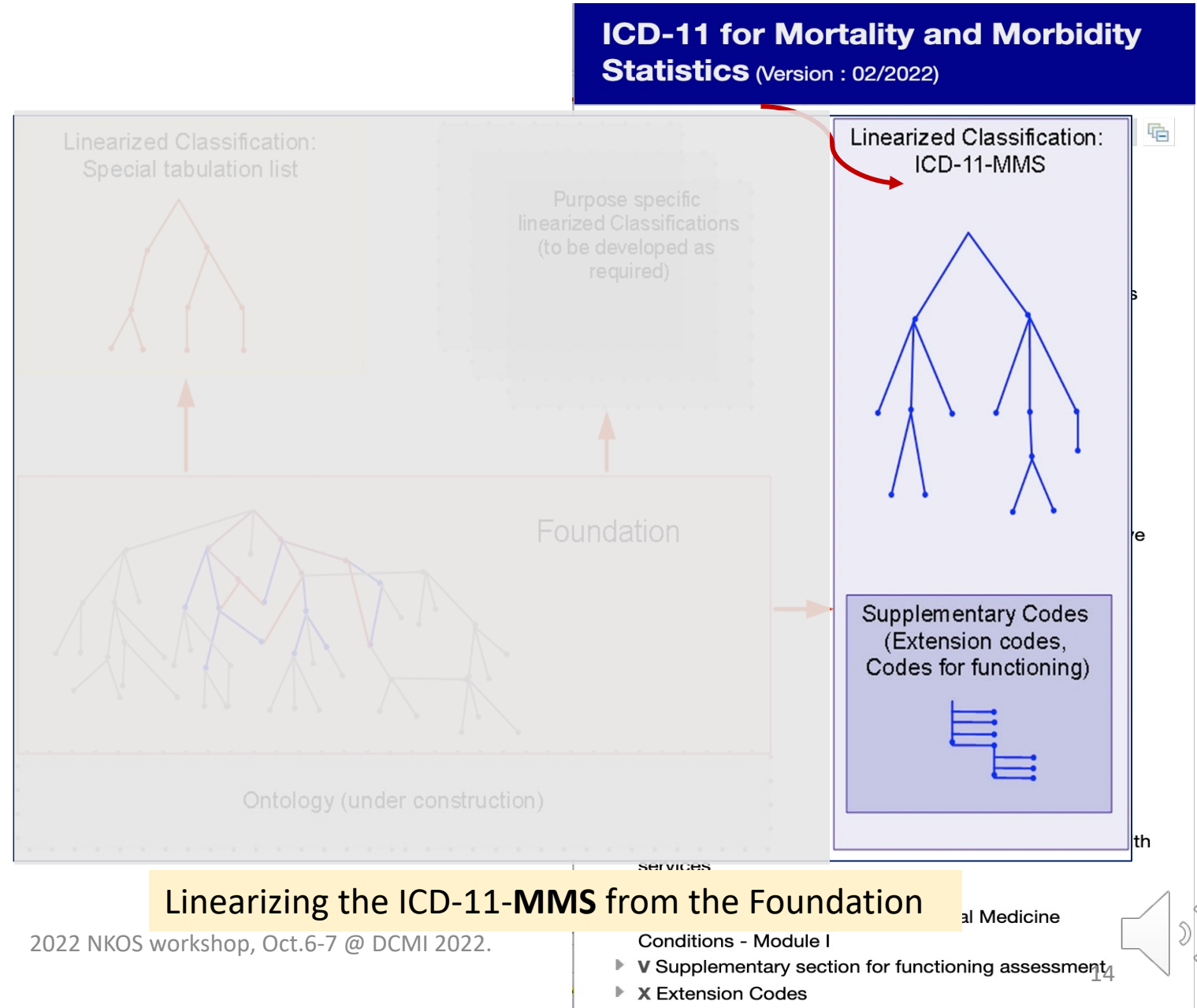


3-a). Having a framework beyond one classification

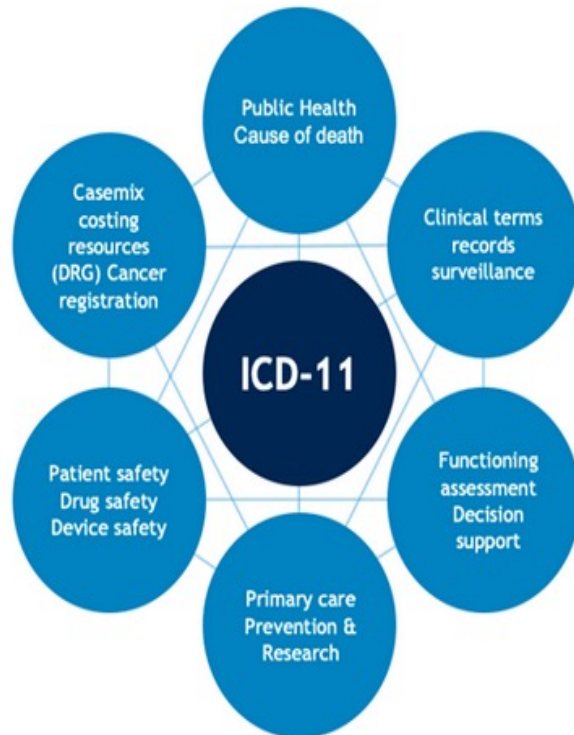
ICD-11's information framework components:

- 1) a semantic knowledge base (referred as the Foundation),
- 2) a biomedical ontology linked to the Foundation, and
- 3) classifications derived from the Foundation.

Ref: Harrison et al. 2021.



3-b). As a classification AND terminology



ICD purpose and uses

As a classification and terminology ICD-11:

- allows the systematic recording, analysis, interpretation and comparison of mortality and morbidity data collected in different countries or regions and at different times;
- ensures semantic interoperability and reusability of recorded data for the different use cases beyond mere health statistics, including decision support, resource allocation, reimbursement, guidelines and more.

Source: ICD webpage <https://www.who.int/standards/classifications/classification-of-diseases>. Accessed Setp. 26, 2022.

2022 NKOS workshop, Oct.6-7 @ DCMI 2022.

ICD-11 for Mortality and Morbidity Statistics

Search COVID-19 [Advanced Search]

ICD-11	RA01 COVID-19
Statistics	RA01.0 COVID-19, virus identified
	RA01.1 COVID-19, virus not identified
01	QA08.5 Special screening examination for other viral diseases
02	Screening for COVID-19
03	RA02 Post COVID-19 condition
04	XN109 SARS-CoV-2
05	COVID-19 virus
06	XN0HL SARS-CoV-2 Alpha
dis	UK COVID-19 variant (deprecated)
07	XN4Q7 SARS-CoV-2 Beta
08	SA COVID-19 Variant (deprecated)
09	XN5BQ SARS-CoV-2 Gamma
10	Brazil COVID-19 Variant (Gamma) (deprecated)
11	XN8V6 SARS-CoV-2 Delta
12	India COVID-19 Variant (Delta) (deprecated)
13	XN1GK SARS-CoV-2 Epsilon
14	USA COVID-19 Variant (Epsilon) (deprecated)
15	XN37F SARS-CoV-2 Zeta
cor	Brazil COVID-19 Variant (Zeta) (deprecated)
16	XN4Q1 SARS-CoV-2 Theta
17	Philippines COVID-19 Variant (deprecated)
18	XN3UD SARS-CoV-2 Iota
19	USA COVID-19 Variant (Iota) (deprecated)
20	XN9LB SARS-CoV-2 Kappa
21	India COVID-19 Variant (Kappa) (deprecated)
22	XN6AM SARS-CoV-2 Lambda
clas	Peru COVID-19 variant (deprecated)
23	XN39J SARS-CoV-2 Mu
ext	Colombia COVID-19 variant (deprecated)

Source: Searching results
captured from ICD-11
<https://icd.who.int/browse11/l-m/en>

ICD purpose and uses

As a classification and terminology ICD-11:

- allows the systematic recording, analysis, interpretation and comparison of mortality and morbidity data collected in different countries or regions and at different times;
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XN109 SARS-CoV-2

XN0HL SARS-CoV-2 Alpha

XN4Q7 SARS-CoV-2 Beta

XN5BQ SARS-CoV-2 Gamma

XN8V6 SARS-CoV-2 Delta

XN1GK SARS-CoV-2 Epsilon

XN3ZE SARS-CoV-2 Zeta

XN2V4 SARS-CoV-2 Eta

XN4Q1 SARS-CoV-2 Theta

XN3UD SARS-CoV-2 Iota

XN9LB SARS-CoV-2 Kappa

XN6AM SARS-CoV-2 Lambda

XN39J SARS-CoV-2 Mu

XN161 SARS-CoV-2 Omicron

Foundation URI : <http://id.who.int/icd/entity/867842560>

XN8V6 SARS-CoV-2 Delta

All ancestors up to top

- X Extension Codes
- Aetiology
 - Infectious Agents
 - Virus
 - XN83D Coronavirus
 - XN109 SARS-CoV-2
 - XN8V6 SARS-CoV-2 Delta

ICD-11 is combining the elements of classification and terminology and is designed to be linked to other terminologies that may provide additional detail or serve different purposes.

ICD-11 (entirely digital) contains

- around 17,000 unique codes,
- more than 120,000 codable terms

ICD-11's smart coding algorithm interprets

- more than 1.6 million terms

Source: <https://www.who.int/news/item/11-02-2022-icd-11-2022-release>

3-c). Providing Foundation URIs

ICD-11 for Mortality and Morbidity Statistics (Version : 05)

Search covid [Advanced Search]

ICD-11 Morbidity and Mortality

- RA01 COVID-19
 - RA01.0 COVID-19, virus identified
 - RA01.1 COVID-19, virus not identified
- QA08.5 Special screening examination for other viral diseases
 - Screening for COVID-19
- RA02 Post COVID-19 condition
- XN109 SARS-CoV-2
 - COVID-19 virus
- XM68M6 COVID-19 vaccine
 - XM1NL1 COVID-19 vaccine, inactivated virus
 - XM5DF6 COVID-19 vaccine, live attenuated virus
 - XM9QW8 COVID-19 vaccine, non-replicating viral vector
 - XM0CX4 COVID-19 vaccine, replicating viral vector
 - XM5JC5 COVID-19 vaccine, virus protein subunit

XM0N24 Yellow fever vaccine

XM68M6 COVID-19 vaccine

XM1NL1 COVID-19 vaccine, inactivated virus

XM5DF6 COVID-19 vaccine, live attenuated virus

XM9QW8 COVID-19 vaccine, non-replicating viral vector

XM0CX4 COVID-19 vaccine, replicating viral vector

XM5JC5 COVID-19 vaccine, virus protein subunit

XM6AT1 COVID-19 vaccine, DNA based

XM0GQ8 COVID-19 vaccine, RNA based

Foundation URI : <http://id.who.int/icd/entity/894585096>

XM68M6 COVID-19 vaccine

Parent

[XM61M7 Viral vaccines](#)

Foundation URI : <http://id.who.int/icd/entity/1104808441>

XM1NL1 COVID-19 vaccine, inactivated virus

Parent

[XM68M6 COVID-19 vaccine](#)

Foundation URI : <http://id.who.int/icd/entity/1316179031>

XM6AT1 COVID-19 vaccine, DNA based

Parent

[XM68M6 COVID-19 vaccine](#)

With the innovative use of the URIs, ICD-11 entities are fully language independent while having a specific place in a hierarchy of groups, categories, and narrower terms. Coding in ICD-11 can draw on statistical codes and on URIs (World Health Organization 2022. *ICD-11 Reference Guide* Sec. 1.1.2).

2022 NKOS workshop, Oct.6-7 @ DCMI 2022.

Source: Searching results captured from ICD-11

3-d). Delivering with an Implementation Package.

In addition to the ICD Browser,

ICD-11 comes with an **implementation package** that includes

- an online coding tool
- an ICD-11 Implementation or Transition Guide
- an ICD-API that provides web services

to enable remote programmatic access to ICD-11,
with enhanced capability to

- capture and combine clinically relevant characteristics of cases and
- integrated support for multiple languages.

covid-19



Guessing the word being typed...

Filter

Word list

sort : Relatedness/repetition

covid-19

Destination Entities

sort: Matching score

RA01	COVID-19	[Details]
RA01.0	COVID-19, virus identified	+ [Details]
QA08.5	Special screening examination for other viral diseases	[Details]
	Screening for COVID-19	
RA01.1	COVID-19, virus not identified	+ [Details]
RA02	Post COVID-19 condition	[Details]
QC01.9	Need for immunization against COVID-19	[Details]
QC42.0	Personal history of COVID-19	[Details]
RA03	Multisystem inflammatory syndrome associated with COVID-19	[Details]
RA01.0/CA...	COVID-19 with pneumonia, SARS-CoV-2 identified	+ [Details]
RA01.1/CA...	COVID-19 with pneumonia, SARS-CoV-2 not identified	+ [Details]
PL00	Drugs, medicaments or biological substances associated with injury or harm in therapeutic use	+ [Details]
	Drugs, medicaments or biological substances associated with injury or harm in therapeutic use, COVID-19 vaccine	

Chapter distribution / filter

☒ Codes for special purposes 7☒ Factors influencing health³ ...☒ External causes 1

★ Filter

- ☐ Infections
- ☐ Neoplasms
- ☐ Blood
- ☐ Immune system
- ☐ Endocrine, nutritional, metabolic
- ☐ Mental and behavioural
- ☐ Sleep-wake
- ☐ Nervous system
- ☐ Eye and adnexa
- ☐ Ear and mastoid
- ☐ Circulatory system
- ☐ Respiratory system
- ☐ Digestive system
- ☐ Skin
- ☐ Musculoskeletal system ...
- ☐ Genitourinary System
- ☐ Sexual health
- ☐ Pregnancy, childbirth ...
- ☐ Perinatal and neonatal
- ☐ Developmental anomalies
- ☐ Symptoms, signs, findings ...
- ☐ Injury, poisoning, ...
- ☐ External causes
- ☐ Factors influencing health ...
- ☐ Traditional Medicine
- ☐ Functioning
- ☐ Extension Codes

Type search terms here and press enter

- ▶ 0 ICD-11 Reference Guide
- ▶ 1 Part 1 - An Introduction to ICD-11
- ▶ 2 Part 2 - Using ICD-11

▼ 3 Part 3 - New in ICD-11

- ▶ 3.1 ICD-11 new conventions and terminology
- ▶ 3.2 Chapter Structure of ICD-11
- 3.3 Multiple Parenting
- 3.4 The Content Model
- 3.5 Language independent ICD entities
- 3.6 Innovation to mortality coding in ICD-11
- 3.7 Innovation to morbidity coding in ICD-11
- 3.8 Functioning section
- 3.9 General features of ICD-11
- 3.10 Traditional Medicine conditions - Module 1 (TM1)
- 3.11 Preparations for the Eleventh Revision
- ▶ 3.12 Annex A: ICD-11 Updating and Maintenance
- ▶ 3.13 Annex B: History of the development of the ICD
- ▶ 3.14 Annex C: Annexes for Mortality Coding
- ▶ 3.15 Annex D: Differences between ICD-10 and ICD-11
- 3.16 Annex E List of rehabilitation-relevant health conditions for which a tailored set of functioning properties is available

3 Part 3 - New in ICD-11

3.1 ICD-11 new conventions and terminology

Table 1: Major changes from ICD-10 to ICD-11, including rationale

ICD-10	ICD-11
Coding Scheme	
Chapter numbering is roman numerals	Chapter numbering is Arabic
Three-character categories, each of which can be further divided into up to 10 four-character subcategories.	Stem code (category) is four characters and there are two levels of subcategories
	An alphanumeric code with a letter in the second position and number in the third character position to differentiate from the codes of ICD-10. The inclusion of a forced number at the third character position prevents spelling 'undesirable words'. A letter in the second character position allows for clear distinction between a code from ICD-11 and one from ICD-10. Alphanumeric codes cover the range from 1A00.00 to ZZ9Z.ZZ. Codes starting with an 'X' indicate an extension code (see Extension code chapter). The letters 'O' and 'I' are omitted to prevent confusion with the numbers '0' and '1'.
Alphanumeric code with a letter in the first position and a number in the second, third and fourth positions. The fourth character follows a decimal point.	The first character of the code always relates to the chapter. A first character of 1-9 is used for chapters 01 through 09 and for chapters 10 through 26, the first character is a letter. The code range of a single chapter always has the same character in the first position. For example, 1A00 is a code in chapter 01, and BA00 is a code in chapter 11.
	The terminal letter 'Y' is reserved for the residual category 'other specified' and the terminal letter 'Z' is reserved for the residual category 'unspecified'.
Residual category identified by numeric character .8 and unspecified category identified by numeric character .9.	ICD-11 supports postcoordination and the linking codes within a code cluster.
Code cluster concept does not exist in ICD-10.	
Terminology	

3.15 Annex D: Differences between ICD-10 and ICD-11

- 3.15.1 Chapter 01 – Differences between ICD-10 and ICD-11 in Chapter 01
- 3.15.2 Differences between ICD-10 and ICD-11 in Chapter 02
- 3.15.3 Differences between ICD-10 and ICD-11 in Chapter 03
- 3.15.4 Differences between ICD-10 and ICD-11 in Chapter 04
- 3.15.5 Differences between ICD-10 and ICD-11 in Chapter 05
- 3.15.6 Differences between ICD-10 and ICD-11 in Chapter 06

3.15.14 Differences between ICD-10 and ICD-11 in Chapter 14

Chapter 14 has undergone major restructuring, with the addition of more detailed entities. The terminology has been updated to be more current. Detail has come from the fusion of the American, British and German dermatological terminologies.

Table 1: Comparison of ICD-10 block structure with ICD-11 equivalent structure

ICD-10 block heading	ICD-11 equivalent structure
L00-L08 Infections of the skin and subcutaneous tissue	Certain skin disorders attributable to infection or infestation
L10-L14 Bullous disorders	Renamed Immunobullous diseases of the skin and included under inflammatory dermatoses
L20-L30 Dermatitis and eczema	Dermatitis and eczema
L40-L45 Paposquamous disorders	Papulosquamous dermatoses (included under inflammatory dermatoses)
L50-L54 Urticaria and erythema	Part of groupings – Urticaria, angioedema and other urticarial disorders and Inflammatory erythemas and other reactive inflammatory dermatoses
L55-L69 Radiation-related disorders of the skin and subcutaneous tissue	Dermatoses provoked by light or UV radiation
L60-L75 Disorders of skin appendages	Disorders of the epidermis and epidermal appendages
L80-L99 Other disorders of the skin and subcutaneous tissue	Redistributed to various groups through restructured Skin chapter

World Health Organization. 2022.

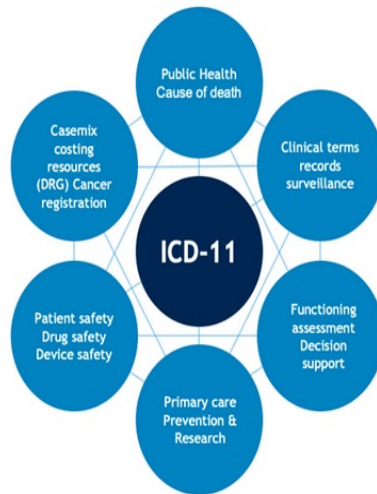
ICD-11 Reference Guide

<https://icd.who.int/icd11refguide/en/>

Conclusion

The insights from ICD-11 reveal that:

- a revision of a KOS vocabulary could have unique methods of
 - ✓ embracing the digital technologies and
 - ✓ unifying the principal KOS approaches.



ICD purpose and uses

As a classification and terminology ICD-11:

- allows the systematic recording, analysis, interpretation and comparison of mortality and morbidity data collected in different countries or regions and at different times;
- ensures semantic interoperability and reusability of recorded data for the different use cases beyond mere health statistics, including decision support, resource allocation, reimbursement, guidelines and more.

Source: ICD webpage <https://www.who.int/standards/classifications/classification-of-diseases>

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Thank you!

Challenges, Opportunities, and Approaches in a Health KOS Vocabulary's Revisions Insights from ICD-11

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