Guidance for mapping to ICHI

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Ann-Helene Almborg[1], Koki Abe[2], Anne Elsworthy[3], Diane Paillet[4], Wansa Paoin[5], Xavier Pastor[6], Warrick Sive[7], Samson W. Tu[8] and Eva Krpelanova[9].

[1]National Board of Health and Welfare, Sweden, Nordic WHO-FIC Collaborating Centre; [2]Japan WHO-FIC Collaborating Centre; [3]Australian WHO-FIC Collaborating Centre; [4]French WHO-FIC Collaborating Centre; [5]Thai WHO-FIC Collaborating Centre; [6]Spanish WHO-FIC Collaborating Centre; [7]WHO-FIC Collaborating Centre in South Africa; [8]Center for Biomedical Informatics Research, Stanford University, USA, WHO Collaborating Centre for Classifications, Terminologies and Standards; [9]Classifications and Terminologies, World Health Organization.

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Contents

1 Introduction

The WHO-FIC Classifications and Terminology Mapping: Principles and Best Practice, A White Paper [1] focuses on mapping to and from the classifications in the World Health Organization Family of International Classifications (WHO-FIC) because of the classifications' central roles in the world of interoperable data and reuse of data. The *Guidance for Mapping to ICHI* builds on and operationalizes the Mapping White Paper for the purpose of mapping national intervention classifications or lists of health interventions to the International Classification of Health Interventions (ICHI)[2]. A draft of *WHO-FIC MbRG: Applying a standard approach when mapping national intervention classifications to ICHI* organized by the Morbidity Reference Group (MbRG) was presented at the annual meeting in October 2022. This draft of the paper was reviewed and updated by the Health Interventions Reference Group (HIRG) during 2025 and incorporated into the *Guidance for Mapping to ICHI*. Mappings from clinical terminologies, such as SNOMED CT and Current Procedural Terminology (CPT), to ICHI are out of scope of this paper.

The development of ICHI began in 2007, with support from a wide range of professionals drawn from WHO-FIC Collaborating Centres in all WHO regions, as well as a number of WHO staff. ICHI covers all parts of the health system and includes a wide range of interventions, often not found in national intervention classifications.

In 2020, ICHI was incorporated into the WHO's classifications platform, which includes all three WHO reference classifications, and is included in the WHO-FIC Foundation [3]. The platform provides an update mechanism that enables improvements in user guidance and scientific updates without compromising the classification's statistical use.

At the 2024 annual WHO-FIC Network meeting, the Health Interventions Reference Group (HIRG) was established within the WHO-FIC Network to maintain and further develop ICHI and related materials, such as the Guidance for Mapping to ICHI.

ICHI has been developed within the WHO informatics framework. The WHO-FIC Foundation is a semantic network of health-related concepts that forms the basis of the three WHO-FIC classifications. These concepts are organized into hierarchies that, unlike the mono-hierarchies of the traditional classifications, allow an entity to have multiple parents. Furthermore, the siblings in the hierarchies are not required to be mutually exclusive and exhaustive. Thus, the "other specified" and "unspecified" residuals are not in the Foundation. The three classifications; ICD, ICF, and ICHI are generated from the Foundation as linearizations. The residuals are added to the classifications as part of the linearization process.

Each entity in the Foundation is denoted by a uniform resource identifier (URI). The information represented in the entity is structured according to a Content Model, which specifies that the entities have certain attributes, such as title, description, and

synonyms. Additionally, each entity in the Foundation is supplemented with linearization-specific information (such as coding notes and suggested post-coordination) that is used to generate the linearization.

2 Purpose and audience of the paper

This paper provides advice on a standard approach, depending on the use case, which may be employed when mapping from a national intervention classification or list of health interventions to ICHI.

The intended audience for this paper is any organization which has a requirement to develop a map between their national intervention classification or list of health interventions and ICHI for reasons such as those in Section 4.1 Use Cases.

3 Definitions of terms

It is recommended that reference be made to ISO-TR-12300:2014 [4] and to section 3.1 of the Mapping White Paper [1].

The definitions of terms given in this table are specific to their usage in this paper.

Term	Definition
Cardinality	Cardinality refers to the number of elements (codes) between the source intervention codes and the target ICHI Stem code(s) with or without extension code(s). (See 4.7.4 for a more detailed discussion). The cardinality of a terminology map, written as n:m, is the number of source entities (n) and the number of target entities (m) in the map. The nature of entities being counted and the relationship between sources and targets need to be defined precisely in the mapping.
Classification	A terminological resource, in this case national and international classifications
Dual independent mapping	The process of having two (or more) mapping experts independently create maps for the same set of source and target concepts. The purpose of the process is to uncover potential ambiguity in the mappings between source and target concepts.
Levels of equivalence	Levels of equivalence between source and target terms describe the nature and extent of the match between the concepts of the source and target terms. Such definitions of the levels of equivalence are necessary when analysing the results of the mapping.

Term	Definition
Extension code	Extension codes are lists of additional information that can be added to a stem code when users require more detail. Extension codes are not mutually exclusive and should not be used alone in the context of statistical classification. Extension codes are not universally applicable; some can only be combined with specific stem codes. Extension codes can never appear in the first position in a cluster.
Map	A map is either an individual map (e.g., “index from one term to another”) or a map set (i.e., a “group of individual maps used to convert a range of entries from source to target code”). (ISO-TR-12300:2014 [4])
Mapping	The process of defining a relationship between concepts in one coding system to concepts in another coding system, in accordance with a documented rationale and for a given purpose.
Map source	The entity that is being mapped. In this use case: National intervention classification or list of interventions
Map target	The entity that the source is mapped to. In this use case: the International Classification of Health Interventions
Map Specialist	Refers to the individual who, using their expert knowledge of the national intervention classification and ICHI, produces the map.
Precoordination	Stem codes which contain all pertinent information about a documented clinical concept in a pre-combined fashion.
Postcoordination	The use of multiple codes (i.e. stem codes and/or extension codes) together to fully describe a documented clinical concept. Postcoordination is permitted as a matter of principle with all codes, as long as at least one stem code is used.
Stem code	Each intervention in ICHI is designated by a stem code. Each stem code in ICHI is described in terms of three axes: Target, Action and Means. Each stem code is represented by a title and a unique seven-character code denoting the axis categories for that intervention: three characters for the Target, two characters for the Action and two characters for the Means.
Syntax (for postcoordination)	Rules that define how stem codes and extension codes should be arranged when postcoordination is used.

4 Mapping process

The overall high-level mapping process is documented in the Mapping White Paper [1] and is reflected throughout this paper.

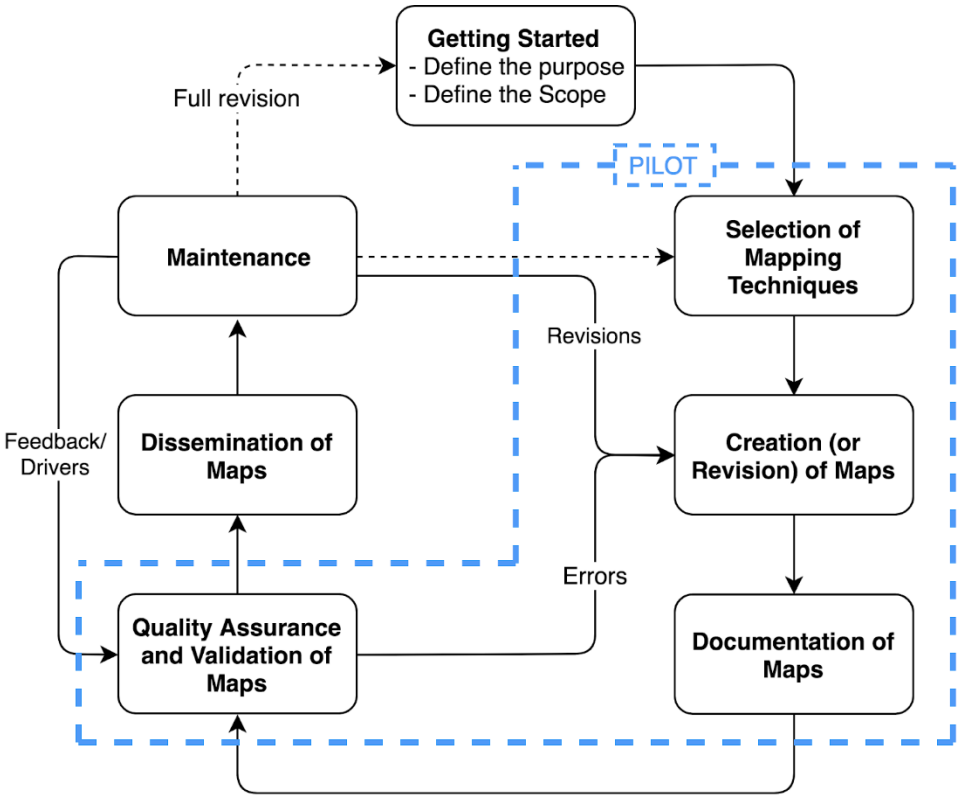

Figure 1 - Overall Process of Clinical Classification/Terminology Mapping

4.1 Use cases

The first step is to identify the source (input) and target (output) classifications. This will depend on the use case. The following are potential use cases for this map, although the list is not exhaustive:

a. Mapping from national intervention classification to ICHI for purposes of international comparison:
   - Several indicators for international comparisons can benefit from a standard definition based on ICHI (e.g., OECD Health Care Utilisation Indicators, European Core Health Indicators). When data is collected at a country level using local classifications of interventions, there will be a need to map them to ICHI.

b. Mappings from a whole national intervention classification to ICHI for evaluation as a replacement:

   - If a legacy system is already in use in a country, switching to another classification or coding system is a very difficult and problematic

process. Nevertheless, situations may arise where the original system does not meet new requirements or cannot be developed further.

- If a country is considering adopting ICHI as a replacement classification system, the first step should be to map the content of the original system to ICHI:
    - A statistical sample of interventions could be used as a test case to determine whether there is any value in progressing to a full mapping.
    - An initial mapping can help evaluate critical parts for transition and continuity of data collection.

- The overall content mapping (bi-directional) of the national intervention classification is then needed to extend or convert historical data collected using the original national classification after the transition.

c. Mappings from part of a national intervention classification to ICHI as a gap analysis for the national classification:

- Comparison with ICHI as an international standard can also be beneficial for checking the content of an existing national intervention classification. This would assist in identifying potential errors and missing parts of the content in the national classification.

d. Mappings from part of national intervention classifications to provide feedback for further development of ICHI:

- Even in an international standard such as ICHI, there may be errors or space for adding new or missing content. Therefore, one of the objectives of mapping is to provide feedback for the further development of ICHI.

e. Mappings for casemix requirements or another secondary use of existing data:

- Some secondary uses of existing health data collected under local classification systems may require conversion to an international standard. One of these is the possible development of an international model casemix system based on ICHI.

f. Using part of ICHI classification:

- Some parts of the classification may be useful for countries whose national classifications have more limited coverage. For example, a country's national classification may not implement the interventions on health-related behaviours and public health. This way, a national classification's mapping to ICHI can identify gaps in its coverage.

4.2 Defining the purpose of the map

The use cases for the map will define the purpose of the map.

The use cases, together with the structure of the source and target classifications (which will have their own purpose separate from the map), will drive requirements for map attributes, metadata, heuristics, advice, and guidelines [1].

4.3 Defining the scope of the map

It may be that the full content of the national intervention classification is to be mapped to ICHI, or the mapping exercise may only require a statistical sampling of the total interventions. If the latter is the case, the sample size will depend on the use case for the mapping.

Additional consideration needs to be given to what the national intervention code will be mapped to:

- ICHI Stem code(s) only
- ICHI Stem code(s) plus extension code(s)

The mapping results would be very different for each of the above.

National intervention classifications may include code attributes that impact mapping to ICHI, such as title, description, instructional notes (e.g., code also), and inclusion/exclusion notes. These need to be accounted for to clarify the concept of the national intervention code when mapping to an ICHI stem code. The result of the mapping and the expression of cardinality and levels of equivalence can differ depending on whether only the national intervention title is mapped or the other information (e.g., description, inclusions) for the national intervention code is also considered.

If the national intervention classification consists of codes that provide additional information, such as extension codes, these should be mapped to the content of ICHI, such as ICHI extension codes, if this is needed for the specific use cases.

The relationship (semantics) between source and target should be clearly defined—whether it is broader, narrower, equivalent or no match. There should be agreement on how composite interventions will be handled and on the implications and resolutions of cardinality when it is greater than 1 (see Section 5.2).

4.4 Selection of mapping targets to ICHI

When mapping a source classification/terminology to ICHI, one has the option of mapping to ICHI codes or mapping to entities in the WHO-FIC Foundation and then converting the Foundation target URIs to ICHI codes. Because a Foundation entity corresponds to a unique ICHI stem code, mapping to the Foundation automatically

generates a mapping table where the targets are equivalent to or broader than the sources. The Mapping Task Force ICD-10/ICD-11 mapping guidance document suggests that not only does mapping to the Foundation potentially allow a more precise map target, but it can also future-proof the maps. Because a Foundation entity may be part of multiple linearizations, mapping to the Foundation allows automatic generation of the source terminology's mapping to such linearizations. At this time, unlike the ICD Foundation where Foundation entities are much more granular than the MMS codes and multiple ICD linearizations have been defined or are planned, the ICHI health interventions do not differ significantly from the health interventions in the Foundation and no other intervention linearization is on the horizon. Thus, the case for mapping to the Foundation is weaker than that for ICD. Nevertheless, it is an option worth considering at the start of a mapping project.

The syntax for mapping to the Foundation is the same as mapping to ICHI. Instead of ICHI codes, the targets would be written using Foundation URIs. Thus, for example, a map from NCSP+ GBSB13 "Revision of tracheostomy" to the Foundation would map it to the Foundation entity with the URL of http://id.who.int/icd/entity/513232657 "Revision tracheostomy," which is an exact match. However, because "Revision tracheostomy" is below the shoreline, the ICHI map target would be a more general concept JBA.MK.AA "Repair of trachea."

Postcoordinating Foundation map targets would use the same syntax as postcoordinating ICHI map targets but using URIs instead of ICHI codes.

4.5 Selection of mapping technique

The selection of the mapping technique will depend on the purpose and scope of the map being created. The common mapping techniques are described in detail in section 5.3 of the Mapping White Paper [1]. These include manual, computational, and hybrid methods. It is important to express the mapping approach to be employed.

4.6 Considerations for replacing a national classification/list with ICHI

4.6.1 Replacing a national classification with ICHI

If the use case is to replace a national classification with ICHI, all content in the national classification needs to be mapped to ICHI. Experience shows that it is easier and more effective to do the map chapter by chapter: to map each national intervention (code) to ICHI stem code(s) and to assign the equivalence and describe the cardinality.

If the map shows that the national intervention is narrower in meaning, then try to map using extension code(s) to specialize the ICHI stem code(s) and try to establish the equivalence again for this map. This can be performed in different ways (although the end results are the same), such as:

a. To map each national intervention code to ICHI stem code(s), assign the equivalence, describe the cardinality and then if required also use postcoordination (with ICHI extension code(s)) to make the ICHI target more specific and equivalent to the national intervention code at the same time before mapping the next national classification intervention code.
b. To map each national intervention code to ICHI stem code, assign the equivalence, describe the cardinality and then continue to map all other national intervention codes before using postcoordination with ICHI extension code(s) if needed to get a more exact match.

4.6.2 Replacing a national list of interventions with ICHI

Mapping the list of national interventions to ICHI can be done in the same way as described above.

4.6.3 To map only the most frequently used national intervention codes

Another use case is mapping the most frequently reported national interventions to ICHI stem code(s).

The maps can be done in the same way as described above (Option a or Option b).

4.7 Documentation of the map

Documentation should be clear, transparent, and freely available to all. It should clearly describe the purpose and scope of the map and provide insight into all processes that have had an impact on the assignment of target codes. To minimize the loss of detail when mapping, the mapping process should utilize all the information available in the national intervention classification, such as titles and descriptions, as these are part of the concept. The results of mapping, assignment of the equivalence, and description of the cardinality can be different depending on which information is used.

4.7.1 Inputs of the map

Document the source and target classifications/list of interventions to be used in the map, including the version of each. Be clear on the scope of the two classifications/lists of interventions being mapped (see Section ‘Scope of mapping’).

4.7.2 Direction of the map

The direction of the map is one-directional, from the national intervention classification or list to ICHI.

4.7.3 Levels of equivalence

A precise definition of the levels of equivalence between source and target is necessary when analysing the results of the map. It is important to decide and describe how the relationship between interventions in the source and target classifications will be measured and presented in the output. How the relationship is determined will greatly influence the degree of equivalence and, ultimately, the results of the mapping exercise.

A possible definition of levels of equivalence is to distinguish among “exact match” (E), “narrower” (N), “broader” (B) and “no equivalence” (X). “Broader” can mean either that the source “is broader than the target” or “has a broader target.” In this guidance we use the latter convention following the mapping literature for the SKOS[1] [5] and SSSOM[2] [6]. The relationship of the maps is evaluated in the direction from the target to the source, in this use case, from the target ICHI stem code(s) with or without extension code(s) to the source intervention.

Table 1. Description of relationship of the map

Determinant	**Expression in maps**
Both source and target have same detail/meaning. The source intervention code is an exact match to ICHI stem code(s) with or without extension code(s)	E (Exact match)
The target is more specific than the source. The ICHI stem code(s) with or without extension code(s) is more specific than the source intervention	N (Narrower)
The target is more general/less specific than the source. The ICHI stem code(s) with or without extension code(s) is more general/less specific than the source intervention	B (Broader)
No equivalence of source intervention code available in ICHI	X (No equivalence)

Table 2. Example of an exact match between source and target title

National classification code (Unique Identifier [UID])	**National Classification Title**	**Foundation URI**	**ICHI Stem Code**	**ICHI Title**	**Levels of equivalence**	**Cardinality**
Nnnnn	Tracheostomy	*http://id.who.int/icd/entity/288278403*	JBA.LI.AA	Tracheostomy	E	1:1

Alternatively, an exact relationship could be determined using the source title and an index term that is a synonym of the ICHI stem code title.

[1] Simple Knowledge Organization System Primer (SKOS)
[2] A Simple Standard for Sharing Ontology Mappings (SSSOM)

4.7.4 Cardinality of maps

Section 4.2 of the Mapping White Paper [1] describes cardinality ambiguities and the importance of defining this characteristic of the map. It is recommended that this section be reviewed before mapping commences.

Cardinality provides information on the different types of maps that may be encountered in the mapping exercise. Cardinality will be between the source intervention code and the target ICHI Stem code(s) with or without extension code(s).

It is important that the project document clearly states the unit of comparison, the meaning of the map (e.g., exact equivalence), and the semantics of cardinality (e.g., whether multiple cardinalities mean the union or intersection of the concepts). In intervention classifications, there is the special problem that many intervention codes may each represent a composition of multiple interventions. Special notation may need to be designed for mapping such codes. For example, the source classification may have two interventions “amputation of a left finger” (A) and “amputation of each left finger” (B) and the target classification has “amputation of the left thumb” (A1), “amputation of the left index finger” (A2) and so on for each left finger. Then A is exactly equivalent to (A1 or A2 or A3 or A4 or A5), and B is exactly equivalent to (A1 and A2 and A3 and A4 and A5). Each map links one source code to five target codes, but the semantics of the maps are very different in the two cases.

There are many ways cardinality may be expressed, all of which may be valid provided that the project document clearly states the expression of cardinality that will be used. The cardinality can be expressed as 1:1, 1:m (many) or the map cardinality may be expressed in numerals (e.g., 1:3 or 1:4) (Table 3). Such expressions can be useful when the units of comparison and the semantics of the “link” between source and target classifications are well defined.

It can also be useful to add information about the number of extension codes assigned such as 1:2 (extension=2), if two extension codes are used (where the same or different extension codes can be associated with either or both stem codes). The extension codes do not need to be unique codes; for example, mapping “Structured assessment of alcohol and drug behaviours” the cardinality can be described as 1:2 (extension=2) (Table 3).

Table 3. Example of different levels of equivalence and cardinality (where the prefix "whofic:" stands for http://id.who.int/icd/entity/)

National classification code (UID)	National Classification Intervention Title	Foundation URI	ICHI Stem /Extension Code(s)	ICHI Title	Levels of equivalence	Cardinality
Nnnnn	Structured assessment of alcohol and drug behaviours	*whofic:891943397& whofic:714944859/ whofic:1299044195 & whofic:714944859*	VAA.AA.ZZ &XG6F00/ VAC.AA.ZZ &XG6F00	Assessment of alcohol use behaviours & Structured/ Assessment of illicit drug use behaviours & Structured	E	1:2(e=2)
Nnnnn	Removal of vagal nerve stimulating electrode	*whofic:397797196& whofic:1740321841*	AAN.JD.AA &XA6VN1	Removal of internal device or foreign body from cranial nerve & Vagus nerve	B	1:1(e=1)
Nnnnn	Other psychotherapeutic social network intervention	*whofic:781252932*	SS2.PQ.ZZ	Psychotherapy for engaging in particular interpersonal relationships, not elsewhere classified	N	1:1

4.8 Mapping toolkit

A mapping toolkit, relevant to the source and target classifications, will aid interpretation of entities and drive consistency when building the map. This will have a positive effect on the quality and integrity of the map. Once the purpose, scope and use case for the map have been established, it is recommended that the following components of a toolkit should be considered:

- Mapping environment
- Knowledge and best practice resources specific to both source and target schemes
- ICHI Online Browser
- ICHI Coding Tool
- Code Fusion
- ICHI Reference Guide
- ICHI Education materials
- National Intervention Classification Alphabetical Index and Tabular List and/or online Browser
- National Intervention User Guidelines
- Mapping methodology
- Mapping editorial principles
- Agile mechanism for feedback on issues throughout the mapping project

4.8.1 WHO-FIC Browser and Coding Tool

The WHO provides a browser and coding tool for ICHI in multiple languages https://icd.who.int. These tools allow users to retrieve concepts by searching for terms, anatomy, or any other element found within the content of ICHI. The ICHI Browser

allows users to search for terms and to see the content of ICHI such as the hierarchical structure of the interventions, axis codes and extension codes. The browser also displays the details of the entities. For coding, the WHO provides the ICHI Coding tool, a simple automated way to find and select the needed codes and their descriptions. Map developers may wish to use a tooling environment that supports dual independent mapping, which is thought to reduce bias when authoring a map.

4.8.2 CodeFusion

CodeFusion is a tool provided by the WHO to help code diagnoses and medical phrases using ICD or other WHO-FIC classifications. Its documentation and download links are available at https://icd.who.int/docs/codefusion/en/.

For mapping to ICHI, provide CodeFusion with an input file that contains the titles and synonyms of the source terminology or classification. CodeFusion uses a lexical and flexible algorithm to find the best matching ICHI codes or code clusters. The matches can include certainty scores. Terminology or classification experts should review the CodeFusion output for accuracy.

4.9 Quality Assurance, validation and consensus management

The mapping product will require quality assurance and validation procedures to ensure appropriate results for the intended use of the map.

First, the mapping output can be evaluated in terms of an internal quality assurance process: the extent to which the intended mapping method is applied to source and target terminologies.

Second, the mapping product can be evaluated in an external independent validation process. It is recommended that the Mapping White Paper, section 5.6 Quality Assurance and Validation of the Map, be reviewed prior to commencement of mapping.

4.10 Dissemination of the maps

Include information on how the output (set of completed maps) will be provided at the end of the exercise, e.g., browser, other tooling, Excel spreadsheets, other files.

4.11 Competencies, knowledge and skills

Map developers should agree on the competencies, knowledge and skills required of team members, such as map specialists, at the beginning of the mapping project. [1]

For the purposes of this map, it is recommended that individuals be entirely familiar with the source (national intervention classification) and the target (ICHI), as well as any published user guidelines.

The ICHI Reference Guide is embedded in the ICHI browser (found under the 'Info' tab).

4.11.1 ICHI Reference Guide and Education materials

ICHI Reference Guide [7] is updated and embedded in the ICHI browser and found under the 'Info' tab. Slides for education materials are updated and will be published.

4.12 Maintenance of the maps

For this paper the maintenance of the map will be determined by the use cases listed. It is recommended that producers of a map between a national intervention classification and ICHI should review section 8.3 Limitations of the Creation and Maintenance of Mappings of the Mapping White Paper [1].

5 Syntax and structure of the national classification and ICHI

5.1 The National Intervention Classification

Describe the national intervention classification and its structure to understand how the classification is built and whether there are any constraints on what will be mapped and how the codes may conflict with the structure and build of ICHI. Describe the definition of the classification, the structure, index terms, includes notes, code also notes, exclusion notes and guidelines for the classification.

5.2 ICHI

The ICHI Reference Guide [7] fully describes the structure, syntax, and conventions of ICHI and can be accessed at the ICHI Platform.

6 Feedback mechanism

Provide a mechanism through which both map specialists and end-users can submit feedback. Maps containing judgement-based (subjective) assignments should be clearly flagged as such, and where the underlying mapping principles have been documented, these should be referenced alongside the flag. This will allow end-users to raise queries and will encourage stakeholders to engage constructively in improving map accuracy over time. [1].

7 Update of ICHI content

Any comments or proposed changes to a particular content area (e.g., title, definition, inclusion terms etc.) of a stem code, axis code, or extension code or any suggestions to add missing entities should be submitted as proposals on the ICHI Proposal Platform. Such input is submitted in the form of a proposal with a detailed rationale, scientific evidence and peer-reviewed references to justify consideration for inclusion on an annual basis.

8 Maintenance and reporting of the map

Whether the map needs to be maintained will depend on the nations' requirements and use case.

When mapping from your national intervention classification to ICHI, it will be useful to document how the analysis of the results will be carried out and how this will be reported and to whom. For example, reporting for the national primary use case as well as to support development of ICHI.

9 References

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10 Appendix

10.1 National Intervention Classifications

This list is provided for information on some of the national intervention classifications used globally. The list is not exhaustive.

Developed by	Name	Full name
Austria	MEL	Single Medical Procedure
Austria	APC/APPC	Austrian Procedure Catalogue
Australia	ACHI	Australian Classification of Health Interventions
Belgium		Nomenclature des prestations de santé de l'institut national d'assurance maladie invalidité
Canada	CCI	Canadian Classification of Health Interventions
Colombia	CUPS	Clasificación única de Procedimientos en Salud
Czech Republic	SZV	Seznam zdravotních výkonů
Denmark	SKS	Sygehusvæsnets Klassifikationssystem
Denmark	UX codes	Danish Classification of Radiological Procedures
France	CCAM	Classification Commune des Actes Médicaux
Germany	OPS	Operationen- und Prozedurenschlüssel
Iran		ICD-9 CM & Relative Value of health services (RVU)
Malaysia		ICD-9 CM with national modifications
Mexico		ICD-9 CM with national modifications
Netherlands		Classificatie van verrichtingen
Nordic countries	NCSP+	NOMESCO Classification of Surgical Procedures
Rwanda		Rwanda Medical Procedures Codes derived from Australian Medical Benefits Schedule (MBS)
Slovakia	ZZV	Zoznam zdravotných výkonov
Spain	CIE-10-ES	Clasificación Internacional de Enfermedades, 5ª Edición-Enero 2024. Procedimientos

Developed by	Name	Full name
Spain (Catalonia)	CIM-10-MC/SCP	Classificació Internacional de les Malalties 10 revisió, 2024, Modificació clínica/Sistema de codificació de procediments
Sweden	KVÅ	Classification of Health Care Interventions (Klassifikation av vårdåtgärder)
Sweden	KSI	Classification of Social Care Interventions and activities (Klassifikation av socialtjänstens insatser och aktiviteter)
Switzerland	CHOP	Swiss Classification of Surgical Interventions
United Kingdom	OPCS-4	OPCS Classification of Interventions and Procedures (currently version 4.9 until 1 April 2023)
United States of America	HCPCS	Healthcare Common Procedural Coding System
United States of America	ICD-9-CM	International Classification of Diseases, 9th Revision, Clinical Modification
United States of America	ICD-10-PCS	International Classification of Diseases, 10th Revision, Procedure Coding System
United States of America	CPT	Current Procedural Terminology
United States of America	NIC	Nursing Interventions Classification
WHO	ICPM	International Classification of Procedures in Medicine
WHO	ICHI	International Classification of Health Interventions